

CARA_2823_PHASE_3870_

Doc Title	File Name	Upload Date	Author
Public Comment Deisch Shelly	cara.txt	05/13/2021	Deisch, Shelly
Public Comment Mertz Dave (Attachment)	Comments on the Pine and Restoration Project.docx	05/03/2021	Mertz, Dave
Public Comment Hilding Nancy	cara.txt	05/17/2021	Hilding, Nancy
Public Comment Hilding Nancy_3	cara.txt	05/15/2021	Hilding, Nancy
Public Comment Hilding Nancy (Attachment)	Pine & Aspen Restore_PHAS comments.pdf	05/17/2021	Hilding, Nancy
Public Comment fischer Edward	cara.txt	04/05/2021	fischer, Edward
Public Comment Mertz Dave	cara.txt	05/03/2021	Mertz, Dave
Public Comment Deisch Shelly (Attachment)	20210513SDGFP.pdf	05/13/2021	Deisch, Shelly
Public Comment Zimmerman Mary (Attachment)	2021-05-14 Pine and Aspen Restoration Project CE - Norbeck Society comments.pdf	05/17/2021	Zimmerman, Mary
Public Comment Hilding Nancy (Attachment)_9	20210509PrairieHillsAudubon.pdf	06/10/2021	Hilding, Nancy
Public Comment Johnson Sarah	cara.txt	05/17/2021	Johnson, Sarah
Public Comment Warnke Marcus	cara.txt	05/17/2021	Warnke, Marcus
Public Comment Johnson Sarah (Attachment)	20210514NativeEcosCounc.pdf	05/17/2021	Johnson, Sarah
Public Comment Warnke Marcus (Attachment)	PAR_CommentLetter_Final.pdf	05/17/2021	Warnke, Marcus
Public Comment Deisch Shelly_14	cara.txt	05/17/2021	Deisch, Shelly
Public Comment Zimmerman Mary	cara.txt	05/17/2021	Zimmerman, Mary
Public Comment Hilding Nancy_16	cara.txt	06/10/2021	Hilding, Nancy
Public Comment Deisch Shelly_17	cara.txt	05/13/2021	Deisch, Shelly



United States
Department of
Agriculture

Forest
Service

Black Hills National Forest
Hell Canyon Ranger District

1019 N. 5th Street
Custer, SD 57730-8214
Phone: 605-673-9200
Fax: 605-673-9350

File Code: 1950

Date: March 31, 2021

Greetings,

The Black Hills National Forest, Hell Canyon Ranger District, is considering commercial and non-commercial vegetation treatments in the Pine and Aspen Restoration project area. The project area is located approximately 9.5 miles northwest of Deerfield Reservoir via West Deerfield Road, NFSR 110. The Wyoming state line is approximately 3 miles west of the project area.

Up to 2,800 acres of treatments are being considered in mixed conifer stands and ponderosa pine stands with a major spruce component. Treatments would be designed to meet an ecological restoration objective of increasing the amount of ponderosa pine and aspen, to be consistent with historical vegetation conditions. The proposed restoration treatments would also provide commercial products to support the local forest industry. Temporary road construction would not exceed 2.5 miles; and any temporary roads would be closed and rehabilitated within three years of completion of the treatment for which the road was constructed. The project design would be refined through a collaborative outreach effort. Please see the attached scoping document for more information.

A preliminary assessment of the proposed project indicates that the use of the Restoration and Resilience Categorical Exclusion (CE) (36 CFR 220.6(e)(25)) would be appropriate to authorize implementation of this project. This CE is new and was proposed as a National Environmental Policy Act (NEPA) review option per the 2020 final rule amending agency NEPA regulations. It is currently on hold for final review. A Decision Memo would not be completed until this CE has been approved for use by the agency.

Treatment of an additional 200 acres of aspen dominated stands would occur per the 2018 Black Hills Resilient Landscapes Project Record of Decision.

Projects of this nature require the issuance of a decision memo but are not subject to objection. While the decision made on this project is final, all public comments on the proposed action will be considered prior to making a decision. Comments should be submitted no later than April 30, 2021.

Comments may be submitted via email at:

<https://cara.ecosystem-management.org/Public/CommentInput?project=59737>.

Please use "Pine and Aspen Restoration Project" in the subject line. Comments may also be submitted via the postal service: Jeff Underhill, 1019 N. 5th Street, Custer, SD 57730.

Any questions concerning the project can be submitted to Jeff Underhill at 605-673-9200, or jeffrey.underhill@usda.gov.

Thank you for your time and consideration.

Sincerely,

TRACY L. ANDERSON
District Ranger

Enclosure: Scoping Document





Scoping Document

Pine and Aspen Restoration Project

Hell Canyon Ranger District,
Black Hills National Forest

T 01 N, R 01E, Sec. 1-3, 10-13
T 01 N, R 02 E, Sec. 6, 7, 18
T 02 N, R 01 E, Sec. 13-16, 22-27, 34-36
T 02 N, R 02 E, Sec. 17, 18, 20, 29-31
Pennington County, South Dakota

March 31, 2021

The Hell Canyon Ranger District of the Black Hills National Forest welcomes your comments on the proposed vegetation treatments in the Pine and Aspen Restoration (PAR) project area. The project area is located approximately 9.5 miles northwest of Deerfield Reservoir via West Deerfield Road, NFSR 110. The Wyoming state line is approximately 3 miles west of the project area.

Project Area. The project area encompasses 12,056 acres and is primarily located in the Castle Creek watershed on the Hell Canyon Ranger District. In addition, the project area contains portions of the Cold Springs Creek and South Fork Rapid Creek watersheds. National forest land occurs on 10,712 acres within the project area and is designated as Management Area (MA) 5.1, Resource Production Emphasis. This area is managed to create a mosaic of tree groups of different ages and heights and a variety of forest structure with mature trees dominating the landscape. Ponderosa pine (*Pinus ponderosa*) was historically the most prevalent tree species. White spruce (*Picea glauca*) is currently the dominant forest type in the project area with greater than 50% of national forest lands currently classified as spruce forest. The project area does not presently contain any late successional pine forest stands (structural stage 5). The occurrence of these stands in the total area designated as MA 5.1 forest-wide is presently 0.5%, well below the forest plan objective of 5%.

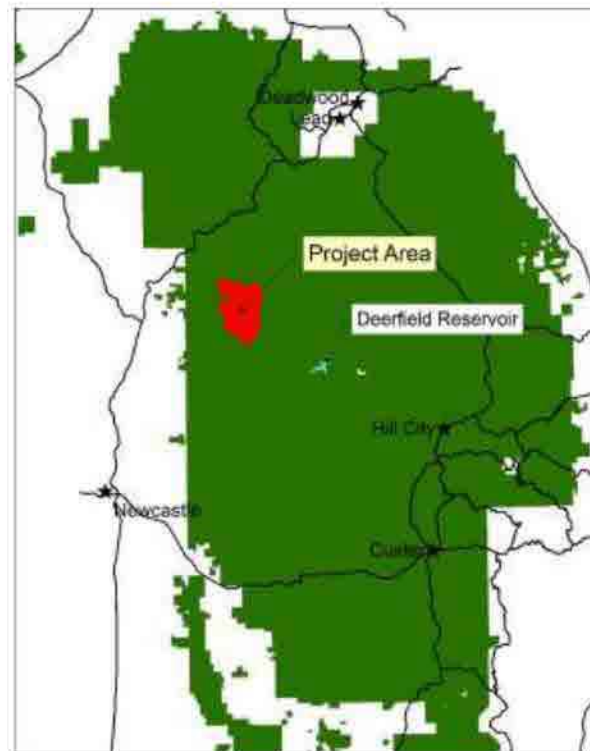


Figure 1. Vicinity Map

Recent vegetation management projects in the area include the Oatman and Luhtasaari timber sales which were implemented per the 2012 Mountain Pine Beetle Response project. These treatments were implemented primarily in ponderosa pine stands to improve resilience to insect infestation and reduce hazardous fuels.

There is a need to increase the occurrence of ponderosa pine and aspen (*Populus tremuloides*) in stands that historically contained higher levels of these species but are now dominated by spruce. Proposed restoration treatments would also provide commercial products to support the local forest products industry.

Within the project area spruce has expanded from its traditional niche. Forest-wide the total area of forestland typed as white spruce has expanded from an estimated 15,000-20,000 acres, 1897-1987, to over 50,000 acres presently. The PAR project will emphasize treatment of forest stands or portions of stands that contain evidence of greater levels of ponderosa pine and aspen in the past. Pure spruce stands or portions of stands that did not contain ponderosa pine and aspen historically would not be treated.

Pure spruce forest stands have always been present in the project area. These stands are found on the northern, moister aspects. Pure spruce stands are typically associated with spruce dominated stands that contain pine and aspen as associates, mixed conifer stands, pine stands, and aspen stands (See Table 1 for forest type descriptions). Aspen stands are co-located with spruce stands on the lower slopes near riparian areas or along edges with meadows and forest openings. Mixed conifer, pine, and aspen stands were more prevalent in the past and spruce dominated stands contained higher levels of pine and aspen. These stands are succeeding to spruce in the absence of fire.

Implementation of the PAR project would be consistent with Landscape Vegetation Diversity (LVD) objective 239 which directs the forest to manage for 20,000 acres of white spruce forestland. Furthermore, the current level of aspen forestland, 60,000-70,000 acres forest-wide, is well below forest plan Landscape Vegetation Diversity (LVD) objective 201 to manage for 92,000 acres of aspen. The highest priority for hardwood restoration is where conifers have out-competed aspen adjacent to riparian systems that once supported beaver.

What needs to be done? Treatments would be implemented on approximately 2,800 acres of National Forest System Lands. In addition, treatment of 200 acres of aspen dominated stands would occur per the 2018 Black Hills Resilient Landscapes (BHRL) Project Record of Decision.

Silvicultural methods such as group selection and patch cutting are proposed in spruce dominated and mixed conifer stands. These treatments would occur only in areas that contain residual ponderosa pine and aspen. Group sizes would be maximized in stands that contain well distributed, large diameter, overstory ponderosa pine that present opportunities to encourage the development of late successional pine forest (structural stage 5). Planting of ponderosa pine seedlings may occur in regeneration groups where natural regeneration will not meet minimum stocking standards due the lack of an optimal seed source or competition with other vegetation.

Improvement cutting is proposed in pine dominated stands that still have a major ponderosa pine component but are rapidly succeeding to spruce. Both ponderosa pine and spruce would be removed from aspen dominated areas per Forest Plan standard 2205 - When treating mixed

conifer/hardwood stands to meet the hardwood restoration objective (201), remove all conifers. This will improve the growth and vigor of these stands and encourage aspen regeneration.

Proposed treatments would maintain American marten (*Martes americana*) corridors through retention of at least 50% canopy cover (stand scale). Treatments would also minimize ground disturbing activity in Cooper's Mountain Snail (*Oreohelix strigosa cooperi*) habitat by limiting the total treatment footprint within a stand and by operating equipment over logging slash and packed snow. Commercial treatments would remove spruce sawtimber and pole sized material. Follow-up maintenance work would be implemented to free aspen and pine seedlings and saplings from competition with spruce.

Table 1. Proposed treatment descriptions, Pine and Aspen Restoration Project.

Treatment Descriptions, Commercial & Non-Commercial (in approximate acres) w/follow up non-commercial treatment occurring on the same acres as the proposed commercial treatments.	
Group Selection w/ Patch Cutting – Spruce Dominated Stands	800 acres
Forest Type Description. These stands are dominated by white spruce. Ponderosa pine is a minor component. Aspen, if present, occurs in pockets, often suppressed in the understory, in openings, or along edges.	
Treatment Prescriptions. Group selection is a silvicultural method intended to regenerate uneven-aged stands in which trees are removed and new age classes are established in small groups. Spruce would be removed from groups ranging in size from 3-5 acres on up to 1/3 of the total stand area. Groups would be located in areas where ponderosa pine can be retained as a seed source. Patch cuts would occur where remnant aspen clones are present. These treatments would be implemented on a smaller scale than the group treatments since aspen is generally a minor component in these stands. Treatment would remove sawtimber size spruce (9.0 inches in diameter at breast height or larger) and pole sized spruce (7.0-8.0 inches in diameter at breast height) to favor the regeneration of ponderosa pine and aspen. Treatments would favor large groups of 5 acres in stands that contain large diameter ponderosa pine to promote conditions consistent with late successional pine forest (on an estimated 200 acres).	
Follow-up Treatments. Stand improvement work would be implemented that would cut spruce saplings and seedlings less than 7.0 inches in diameter at breast height to remove competition with pine and aspen regeneration. Stocking surveys would be conducted to ensure that adequate levels of ponderosa pine natural regeneration are present within 5 years of commercial treatments. Pine seedlings would be planted in groups where natural regeneration is below desired levels. Noxious weeds treatments would be implemented to suppress infestations as needed.	
Group Selection w/Patch Cutting – Mixed Conifer Stands	1,900 acres
Forest Type Description. White spruce is still the dominant species in these stands however ponderosa pine is a major associate. Aspen may be present in greater numbers than in spruce stands but is still a minor component.	
Treatment Prescriptions. See description for spruce dominated stands. Treatments would favor large groups of 5 acres in stands that contain large diameter ponderosa pine to promote conditions consistent with late successional pine forest (on an estimated 500 acres).	
Follow-up Treatments. See description for spruce dominated stands.	
Improvement Cutting – Pine Dominated Stands	100 acres
Forest Type Description. Ponderosa pine is the dominant species however these stands are succeeding to white spruce (approaching 50% of the total stand stocking). Aspen is minor component in majority of these stands but is variable and can be found in more than incidental numbers in a small number of these stands.	
Treatment Prescriptions. Improvement cutting is a silvicultural method intended to shift species composition towards desired conditions. These treatments are implemented in pole sized or mature, sawtimber sized stands. Treatment would remove sawtimber size spruce (9.0 inches in diameter at	

breast height or larger) and pole sized spruce (7.0-8.0 inches in diameter at breast height) throughout these stands to favor the regeneration of ponderosa pine and aspen where present.	
Follow-up Treatments: Stand improvement work would be implemented that would cut spruce saplings and seedlings less than 7.0 inches in diameter at breast height to remove competition with pine and aspen regeneration. These stands would be fully stocked following commercial treatment so natural regeneration surveys would not be conducted. Noxious weeds treatments would be implemented to suppress infestations as needed.	
TOTAL Commercial/Non-commercial Treatment Acres:	2,800 acres

BHRL Improvement Cutting, Hardwood Enhancement – Aspen Stands	200 acres
Forest Type Description. These stands are dominated by aspen but are succeeding to conifers, primarily white spruce, with minor amounts of ponderosa pine present. White spruce has become the dominant species in the understory and little or no aspen regeneration is present.	
Treatment Prescriptions. Improvement cutting would remove all conifers to reduce competition to existing aspen and promote aspen regeneration. Majority of these treatments would be non-commercial and tree felling would primarily occur in the seedling and sapling size classes (trees less than 7.0 inches in diameter at breast height). Commercial treatments may be implemented in stands or portions of stands than contain sawtimber sized conifers and are feasible to include with other commercial treatment units. A few of these stands may contain large diameter ponderosa pine mixed with aspen in the overstory. These trees would be retained.	
Follow-up Treatments. Stand improvement treatments would be implemented to remove any conifers that were not cut during the initial treatment entry or seedlings that have become established following the initial treatment. These stands would be fully stocked following commercial treatment so natural regeneration surveys would not be conducted. Noxious weeds treatments would be implemented to suppress infestations as needed.	

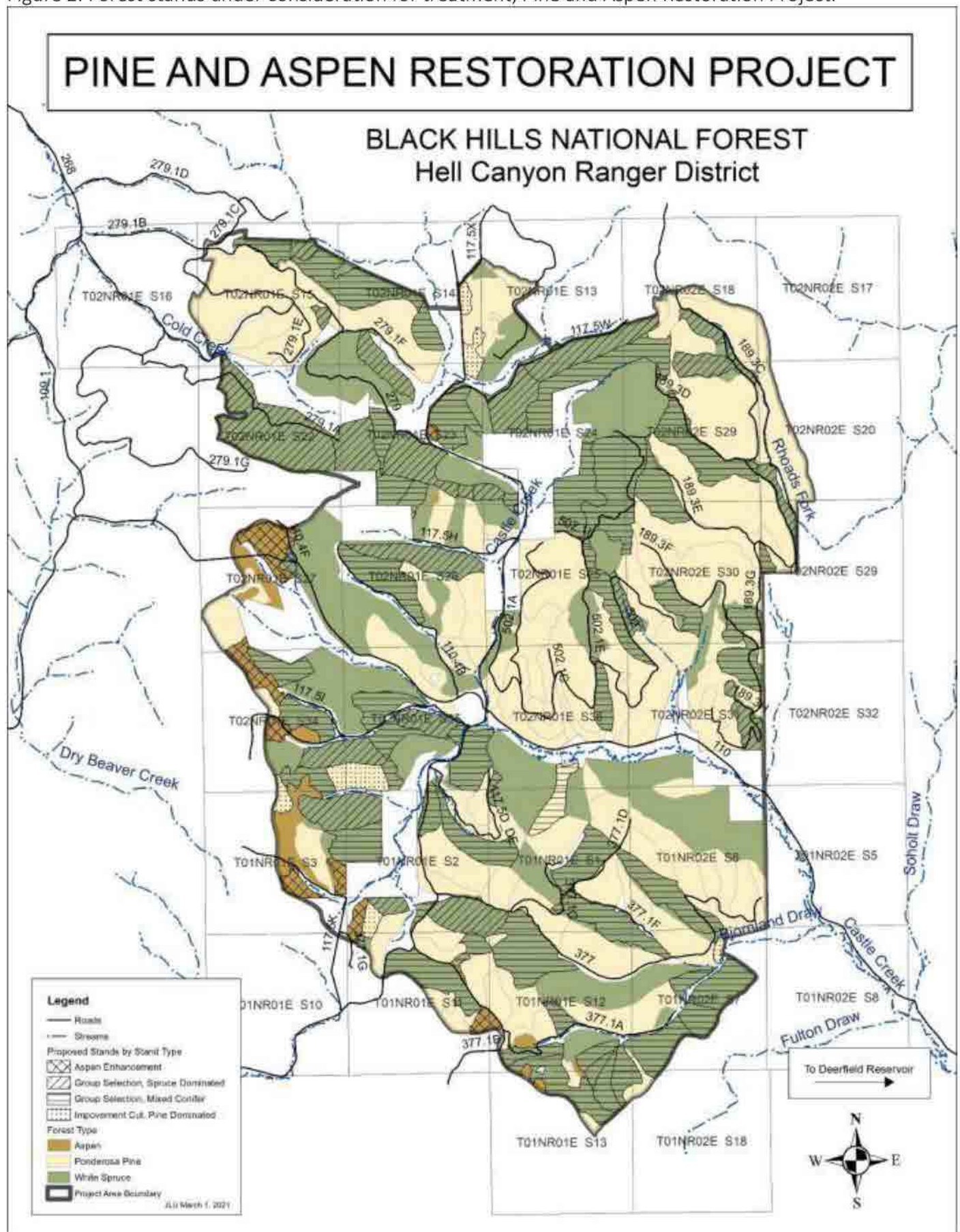
See Figure 2 for a map of stands under consideration for treatment, by forest type, for commercial and non-commercial treatments (page 5).

Comments. We are requesting your input on the proposed vegetation treatments in the Pine and Aspen Restoration project area. Comments should be returned no later than April 30, 2021 and may be submitted via email at:

<https://cara.ecosystem-management.org/Public/CommentInput?project=59737>. Please use “Pine and Aspen Restoration Project” in the subject line. Comments may also be submitted via the postal service: Jeff Underhill, 1019 N. 5th Street, Custer, SD 57730.

Any questions concerning the project can be submitted to Jeff Underhill at 605-673-9200 or jeffrey.underhill@usda.gov.

Figure 2. Forest stands under consideration for treatment, Pine and Aspen Restoration Project.





United States
Department of
Agriculture

Forest
Service

Hell Canyon Ranger District

1019 North 5th Street
Custer, SD 57730
605-673-4853
Fax: 605-673-5461

File Code: 1950
Date: April 22, 2021

Greetings;

Based on current weather and field conditions in the Pine and Aspen Restoration project area the Black Hills National Forest, Hell Canyon Ranger District is extending the scoping period by two weeks. The main access roads are currently being plowed. This will allow our stakeholders more time to access the project area and provide comments on our proposed action.

Comments should be submitted no later than May 14th, 2021. If you have already submitted comments and wish to add to those you may do so by the May 14th date as well.

Any questions concerning the project can be submitted to Jeff Underhill at 605-673-9200 or jeffrey.underhill@usda.gov.

Thank you for your time and consideration.

Sincerely,

TRACY L ANDERSON
District Ranger



Date submitted (UTC-11): 5/13/2021 12:00:00 AM

First name: Shelly

Last name: Deisch

Organization: South Dakota Department of Game, Fish and Parks

Title: Sr. Wildlife Biologist and FS Liaison

Comments:

[The text below was copied from the attachment for coding purposes; see the attachment for photos.]

April 29, 2021

Tracy L. Anderson, Hell Canyon District Ranger Black Hills National Forest

1019 North 5th Street Custer, SD 57730

Deadline: May 14, 2021

Email to: <https://cara.ecosystem-management.org/Public/CommentInput?project=59737>
jeffrey.underhill@usda.gov kris.hennings@usda.gov

Subject line: Pine and Aspen Restoration Project Dear Ranger Anderson,

The Department of Game, Fish, and Parks (SDGFP), Division of Wildlife (DOW) submits comments on the above-referenced Project (Project). The DOW has reviewed the Hell Canyon Ranger District's Scoping Notice to significantly reduce native Black Hills white spruce (*Picea glauca*) across 2,800 acres northwest of Deerfield Reservoir via Categorical Exclusion (CE) (36 CFR 220.6(e)(25)). CE 25 is a new CE for meeting restoration objectives and other watershed and habitat conditions (Federal Register Vol. 85, No. 224, Nov. 19, 2020 at 73620-73632). CE 25 has never been implemented on BHNF and this demonstration project is of first impression. Proposed activities include pine plantings and likely scarification site prep, spruce thinning, and targeted spruce timber harvesting. The project proposes to treat another 200 acres of aspen per the 2018 Black Hills Resilient Landscapes Project (BHRL). A deadline extension of May 14, 2021 is generous and offers us the ability to visit the Project area.

BHNF has proposed a need to "increase the occurrence of ponderosa pine and aspen in stands that historically contained higher levels of these species but are dominated by spruce." A secondary need, per CE 25, is to provide commercial products to support the forest products industry.

DOW has historically supported vegetation diversity across the landscape, especially the early and late successional forested plant communities. These forests support habitats for those species which rise to a level of ecological concern (Emphasis Species) because their habitats are disproportionately critical to their viability and distribution across the landscape. Emphasis Species represent the need for additional conservation measures, viability assessments, and vegetation management sideboards per FS Directives.

For early successional forests, we have extensively commented in the past on the need to treat aspen and hardwood stands for release and recruitment into mature functioning systems. In order to be recruited into functional systems, some form of protection is necessary as supported by DOW knowledge and scientific literature. We support hardwood management under certain ecological and scientifically tested conditions stated herein. While ponderosa pine is the dominant conifer in western South Dakota, DOW also recognizes the loss of mature and late successional pine structural stages (SS's) for various reasons, and supports the need for this end of the ecological scale to be represented forest-wide (Forest Plan SS's Objectives) when it compliments or does not conflict with other ecological considerations as stated herein. Spruce is an uncommon conifer in the Black Hills, and we have historically supported management of unique mature and late successional spruce and mixed conifer communities.

Where these two ecological processes and forest seral stages (early and late) meet, there are resource conditions such as the habitats described in the CE scoping notice. Nature does not consistently and clearly divide ecological processes into neat, separate seral stage compartments across a landscape. Because of this, there are flora and fauna Emphasis Species which inhabit these mixed ecological scenarios, adding to overall landscape diversity. The unique conditions of pine, spruce, and aspen all converging within the delineated

project area requires a "hard look" evaluation of how BHNF is proposing to drive the ecological systems with insufficient considerations given to these uncommon mixes of habitats.

We support removing some successional stages of spruce (such as seedlings, saplings, and immature spruce) which have "rapidly" (Project narrative term) expanded for various reasons outside spruce's ecological zone. Historical vegetation records reach back limited years yet are used as the reference where BHNF chooses to set its management benchmark (Historical Range of Variation - HRV) within the Phase II Amended Land and Resource Management Plan. We would like to discuss historic and recent vegetation SS inventories and review where spruce has expanded.

We appreciate the scoping notice's transparency that BHNF intends to continue to target removal of spruce of various SS's up to 30,000 acres. This demonstrates that such removals are foreseeable, connected, and cumulative effects actions. These foreseeable actions could invoke 10-12 CE 25's over time, which rises to the NEPA analysis level of a forest-wide EIS. However, a forest-wide EIS and ROD to approve spruce removal is lacking at this time. The Phase II Plan Amendment only anticipated a maximum of 5,000 acres of spruce removal within the lifetime of the Plan, not 30,000. Therefore, we request the consideration of a forest-wide EIS instead of incrementally removing spruce using CE 25.

We suggest that this Project as proposed incorrectly presumes that CE 25 is the appropriate authority to remove various SS's of spruce and to retype mixed conifer stands to pine; a species which dominates the forested landscape. Development of the scoping notice has missed that there are extraordinary circumstances and therefore, an EA or EIS is warranted. A CE Decision Memo must include a finding that no extraordinary circumstances exist and as proposed, this Project cannot meet that NEPA criteria. We have identified extraordinary circumstances and assert that uncertain impacts on at least one FS Region 2 Sensitive Species (R2SS), the American marten, will result due to this Project. Uncertainty precludes use of CE authority.

We suggest that the proposed Project seeks unprecedented actions which rise to a level of more rigorous, hard look NEPA analysis, and treatment alternatives.

Despite our past requests to retype treated pine stands to hardwoods after a hardwood release, the response has been that database and inventory exercise are outside the scope of a project. Another example is in our 10-30-2017 BHRL DEIS comment letter and BHNF's response to such request. Yet, this Project is proposing to retype spruce to ponderosa pine as part of the Project. We seek clarification. We also recommend that removal of conifers in hardwood stands should be given the same ecological restoration and inventory considerations and be retyped to hardwoods.

Unfortunately, BHNF has conflicts with forest Plan directives in this Project proposal and DOW cannot support it at this time. The Project reaches well beyond the site-specific project level.

However, we invite engagement with BHNF because there are likely opportunities to take a hard look at other areas across the landscape which may better fit into CE 25, an EA, or an EIS at a project or forest-wide level for "restoration" by removing some SS's of spruce. As outlined herein, we provide information for BHNF's consideration. We extend an invitation for conversations with the Hell Canyon District and BHNF Forest Biologists to discuss the various Emphasis Species which will be impacted by employment of CE 25, as proposed. Thank you for the opportunity to comment.

Sincerely,

Shelly Deisch, Public Lands Liaison and Sr. Wildlife Habitat Biologist shelly.deisch@state.sd.us Desk:
605.394.1756

CC:

Kevin Robling, Department Secretary Tom Kirschenmann, Division Director

Paul Coughlin, Terrestrial Habitat Program Administrator Chad Switzer, Terrestrial Wildlife Program
Administrator Trenton Haffley, Regional Terrestrial Resources Supervisor Mike Klosowski, Regional Supervisor

John Kanta, Terrestrial Section Chief David Mallett, Wildlife Biologist Shannon Percy, Parks and Recreation

Addendum

Pine and Aspen Restoration Project through Removal of White Spruce

Use of CE Authority, Uncertainty to R2SS, and More Rigorous NEPA is Warranted
Forest Service Handbook (FSH) 1909.15, Chapter 30, tiered to the Code of Federal Regulations (CFR) provides guidance to the Forest Service (FS) for CE determination, such as whether "extraordinary circumstances" exist, and if the proposed action warrants further analysis and documentation in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) (36 CFR 220.6(b)). Scoping is the means to identify the presence of extraordinary circumstances that warrant a more rigorous and higher level of NEPA.

One resource condition that must be considered is the presence of Region 2 Sensitive Species (R2SS). The American marten (*Martes americana*) is a reintroduced species from extirpation and has met the criteria as a R2SS (and is a BHNF Species of Local Concern (SOLC)).

Therefore, the responsible official must determine the degree of potential effects on R2SS: "If the degree of potential effects raises uncertainty over its significance, then an extraordinary circumstance exists, precluding the use of a categorical exclusion."

FSH states that the "mere presence of a sensitive species" in the Project area does not preclude use of a CE but asks the FS to determine if there is a "cause-effect relationship between the proposed action and the potential effects on resource conditions". The potential effects on resource conditions is not confined to the narrow assessment of only marten corridors. Potential "extraordinary circumstances" include the uncertainty if marten occupy habitats and use corridors in a proposed Project area and how proposed vegetation treatments may impact marten resources, distribution, movements, and risks to predation.

The Project proposal recognizes that the small delineated area provides marten corridors per the Phase II Plan Amendment and acknowledges that marten are or could be in the Project area. Objective 221 states that BHNF will conserve or enhance habitat (not just corridors) for R2SS and SOCL. BHNF has had extensive and significant landscape-scale habitat and resource condition changes since the 2003 marten habitat model (Fecske 2003) and the 2005- 2006 Phase II Amendment NEPA efforts. For example, across the forest and within the Project area, both mature and late-successional pine and spruce have been significantly impacted and reduced by mountain pine beetle mortality, vegetation treatments, intense harvests, and other mortality factors such as fire and storms which are additive to natural background mortality levels. These landscape scale events have changed vegetation conditions on the forest unanticipated by the 2006 Phase II Forest Plan Amendment. Various structural stages of conifer stands were recently treated or harvested in the Oatman and Luhtasaari timber sales. Within the Project area, past group selection treatments in spruce-typed stands are stark from aerial photography.

Uncertainty in the impacts of the proposed Project lies, in part, that DOW does not have marten abundance index or population estimate since these resource condition changes. Smith (2007) tested track plate methods to estimate marten occupancy. However, BHNF nor DOW have conducted recent forest-wide population estimate nor do either agency have a recent re- analysis of forest-wide marten habitat abundance (Fecske 2003) to meet Phase II Amendment directives such as Objective 211. Fifteen years have passed since the Phase II Amendment FEIS and ROD. Forest-wide monitoring of marten habitat acreage was last published for FY 2013-2014. With an increase in spruce abundance and distribution, we cannot erroneously presume that younger age classes and early SS's equate to quality marten habitat or corridors. Marten depend upon mature and late successional spruce and mixed conifer stands.

Black Hills 2018 Resilient Landscapes Biological Specialist's report indicated that the proposed and selected action could cause direct marten mortality compared to no action alternative.

Further fragmentation and loss of habitat (extensive removal of mature and late-successional pine and limited spruce removal) was expected in MA 5.1. Road construction in BHRL was assessed as creating additional habitat degradation and disturbances to marten. These cause-effect actions in and adjacent to the Project area (Oatman and Luhtasaari) together with the proposed Project, leave an uncertainty to marten and its habitat components (such as corridors, logs, CWD, and prey such as small mammals). Again, BHNH is precluded from using CE Authority, and preparation of an EA or EIS is warranted (FSH 1909.15, 31.2, 36 CFR 220.6(b)(2), FSH 1909.15 Chapter 10 Section 1.6 Exhibit 01)). Scoping identifies past, present, or reasonably foreseeable future actions with the potential to create uncertainty over the significance of cumulative effects and should be commensurate with project complexity (FSH 1909.15 Chapter 30 31.1).

The cause-effect relationship of the proposed Project includes uncertainty to the impacts to R2SS including but not limited to American marten, northern flying squirrel (*Glaucomys sabrinus*) which prefer mixed conifer stands, Cooper's snail (*Oreohelix strigose cooperi*), and sensitive plants such as prairie moonwort (*Botrychium campestre*) and lesser yellow lady's-slipper (*Cypripedium parviflorum*). It is "reasonably foreseeable" that the proposed Project includes uncertain risks of marten displacement out of the Project area and adjacent preferred habitats due to this CE Project and other more recent projects. It is reasonably foreseeable that BHNH intends on conducting similar CE 25 projects throughout marten habitats which are "connected actions". Lastly, the loss of mature and late successional conifers through various mortalities listed above has resulted in "significant cumulative effects", precluding the use of CE Authority and an EA or EIS is warranted.

American Marten Life Requirements and Black Hills Status

Marten have very distinct habitat requirements of mature and late successional forests. Habitat alterations in these limited seral and structural stages increase the risk of marten displacement, declines in an already limited population, or at worst, extirpation. Thus, the species indicates ecosystem integrity because declines in its distribution and abundance are a barometer to ecosystem deterioration (Fecske et al. 2002).

Fecske (2003) provides some historical context of the long-term persistence of the Project area's habitat because in the late 1800's early 1900's, a trapper was paid for marten pelts which he trapped between Deadwood and Newcastle. In 1929-1930, a local trapper trapped 17 marten in the Beaver Creek Drainages near the SD-WY border, near or including the Project area. This indicates that mature and late successional spruce and mixed conifer stands have existed in the Project area for well over a century and have existed in this region tree generation after tree generation. Between 1930 and 1979, no records exist for marten and were thought to be extirpated from the Black Hills. By 1976, DOW began planning to reintroduce the native predator and furbearer. There was an identified need to have marten, a species integral to the ecology and integrity of dense, mature spruce and pine habitats, return to the Black Hills.

Various public groups have an interest in this native predator. Two reintroduction phases occurred in the 1980's and 1990's (SDGFP Internal Files, Fecske 2003, and B. Waite, reintroduction biologist, 2021 Pers. Comm). One reintroduction site is near the Project area (SDGFP Internal Files, Fecske 2003).

Marten have a low reproduction potential with only 1 pup/year. Past research has indicated that marten occurrence is associated with areas of high precipitation, near prior release locations, and mature aged conifer forests (Smith 2007). Marten are an indicator of late successional forest in 9 out of 13 forests in which they are found. They need deadfall, both leaning and downed, for hunting and traveling. The Project area is potentially one of the most important examples of marten habitat along Cold Creek and Castle Creek drainages. Mature and late successional spruce, pine, and mixed conifer habitats are already fragmented. Further fragmentation as proposed in this Project could "exacerbate bottleneck effects and threaten long-term viability[hellip].. and long-term planning include protection of mature forest stands surrounding occupied areas." (Smith 2007). Mature and late-successional pine stands are also critical to assuring connectivity corridors are linked to mature conifer stands. Marten life requirements, available and preferred habitats, and adjoining habitats are critical to Project planning.

The most significant marten predator are great horned owls (B. Waite, 2021, Pers. Comm). Great horned owls inhabit a wide variety of habitats, but have a component of being more open. As BHNH becomes more open

due to MPB, logging, fire, and other tree mortality factors, there are antidotal observations that great horned owls may be more abundant; at least their preferred open habitats are more abundant. The dense cover provided by mature and late successional conifers provides more hiding and escape cover for marten. Opening the Project area canopy cover and fragmenting connective canopies may increase mortality risks to marten.

BHNF Plan standard 3215 requires retention of at least 50% canopy cover but canopy cover can be denser. Thinning to remove overstory in dense areas to 50% is minimum and every effort should be made to retain at or above 50% of spruce, pine or mixed-conifer in SS's 3B, 3C, 4B, 4C, and 5 with at least 50% of the BA in conifer species and at least 40% of the BA in white spruce regardless of forest typed conifer stands (Buskirk 2002, BHNF Burns 2011). Corridor linkages must expand beyond the Project area to provide quality marten habitat for the Northern Hills subpopulations. Logs and CWD must also be retained (Standard 2308).

The responsible official for this proposed Project shall use the best available scientific information (BASI) (36 CFR 219.3). Use of BASI must be documented for the project analysis/assessment, the project decision, and the monitoring program. Local research should be primary to other sources. For example, while marten may not use or depend on pine or mixed spruce-pine stands elsewhere in its range, it uses and depends upon these mixed stands in the Black Hills for their life and habitat requirements (Fecske 2003). Marten are disconnected from other marten populations outside the Black Hills, and are potentially disconnected between two subpopulations. Any project which creates uncertainty in how actions may impact a limited marten subpopulation the northern hills, may jeopardize not only that northern tier, but may jeopardize the Black Hills population as a whole. There is a second subpopulation in Custer State Park and Norbeck Wildlife Preserve. The two existing subpopulations already have challenges and high risks of exchanging individuals through migration where connected corridors are lacking.

Emphasis Species

The FS Region 2 Forester identified certain species as "sensitive" and for which population viability is a concern:

1. Significant current or predicted downward trends in population numbers or density.

1. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution (FSM 2670.5)." (2005 Phase II Amendment FEIS a at III-75).

The rationale for SOLC final determination was: "Limited population and habitat, extremely low reproductive rate, and single small population on the Forest. Extremely susceptible to disease and parasites. Need management to maintain habitat and undisturbed areas."

Management Indicator Species within the project area include ruffed grouse and Golden crowned kinglet. Former DOW employees were interviewed recently and stated that the Project area has some of the best ruffed grouse habitat due to the mix of spruce and aspen.

Historically, some of the highest occurrences of ruffed grouse existed for the western Black Hills because the grouse depended upon both early and late successional habitats year-round.

Demand Species: Spruce and mixed spruce-pine communities provide cover (hiding, screening, and winter and summer thermal) for deer and elk and their young (DePerno 1998.). Greater than 40% canopy cover is required for wild turkey (*Meleagris gallopavo merriami*) (Rumble and Anderson 1995)

FS Definition of Objective

FS defines an objective as, "Concise statement of desired measurable results intended to promote achievement of specific goals. Attainment of objectives is limited by the application of standards and guidelines. Objectives should be expressed in terms of outcomes, not actions; and must be attainable within the fiscal capability of the unit, determined through a trend analysis of the recent past budget obligations for the unit (3 to 5 years)" What are the expected costs of the CE NEPA, treatments, and harvest?

FS Definition of Restoration and Ecosystem Restoration

CE 25 relies on "restoration". FS definition of restoration (<https://www.fs.fed.us/restoration/>) includes "creating and maintaining healthy, resilient forests capable of delivering all the benefits that people get from them: clean air and water, carbon sequestration, habitat for native fish and wildlife, forest products, opportunities for outdoor recreation, and more[hellip][hellip]Monitoring and evaluation of restoration projects are essential adaptive

management steps for achieving sustainable ecosystems[hellip].. Restoration activities will complement management to maintain conditions in areas with ecological integrity[hellip]..The expectation is that forest restoration treatments will lead to forest resilience and a lower probability of a catastrophic disturbance and that consequently, more carbon will continue to be sequestered than would otherwise occur without the treatment."

"Assessing current and potential future conditions should result in a detailed description of the composition, structure, pattern, and ecological processes of the ecosystem as it moves along an ecological trajectory through time. Moving along a trajectory means that ecosystems are not static and may have changing characteristics [hellip].Restoration spans a number of initiatives in various program areas, including the invasive species strategy; recovery of areas affected by high severity fires, hurricanes, and other catastrophic disturbances; fish habitat restoration and remediation; riparian area restoration; conservation of threatened, endangered, and sensitive species."

For purposes of interagency discussions, we are unclear how established, historically typed spruce and mixed conifer stands do not provide composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystems sustainability, resilience, and health under current and future conditions. In 200 acres, there is proposed to be 5-acre group retention of "large" diameter pine (no dbh given) to "promote" (the narrative did not say "to retain") late successional pine. The mere under-representation of SS5 appears that BHNF is trying to create an ecological component on 200 acres where it does not exist and may have existed at one time but for MPB and/or recent harvest treatments. We support allowing mature pine stands the time to become SS5, but that opportunity has existed across the forest for decades and more specifically since 2006 Phase II Amendment. We know of areas left untreated in one project as "future late succession" only to have another harvest entry in less than 10 years because "the mature overstory is ready for harvest." The scoping notice negated to describe why pine stands treated in Oatman and Luhtasaari did not identify, retain, and recruit pine into SS5 or future SS5 under a resiliency directive (BHRL 2018). The Project area is 10,712 acres and all pine SS's are not expected to be found on all acres, especially within small delineated project areas. Project analysis should discuss why now and why here is BHNF choosing to drive the ecological system to create SS5 where it doesn't exist, in favor of removing or at least degrading late successional spruce and mixed conifer stands.

Based on FS restoration definitions and guidance, not having SS5 within a small Project area does not appear meet the ecological site conditions for an ecological restoration CE. Rather, the historical stands of mature and mixed conifer meet MA 5.1 desired conditions and Objective LVD 239 for a mosaic of forest structure and diversity. Removing mature and late successional spruce in mixed stands in a forest dominated by pine and replanting to pine will actually reduce mosaic forests. Mature and late successional stands of spruce are disproportionately important to providing overall forest ecological integrity, diversity, functioning, and resilience and should not be treated in this particular area.

Shepperd and Battaglia (2002) stated that the furthest western occurrence of white spruce (*Picea glauca*) is in the Black Hills. There are two or three spruce community types which disproportionately provide habitat for species not available in other forested types. Because of the limited abundance and spatial distribution of spruce community types, they are important to the BHNF's goal of species diversity across the landscape.

The scoping notice states that the Project is for ecological restoration to be consistent with historical vegetation conditions. Ecological restoration is defined as: "The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. Ecological restoration focuses on reestablishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystem sustainability, resilience, and health under current and future condition[hellip]..ecological restoration may seek a historical reference condition." (36 CFR 219.19 and FSH 1909.12) .

Upon review of the BHNF Phase II Amendment FEIS, spruce was not a common or dominant conifer species across the landscape. The EIS stated that spruce was maybe 5,000 acres over its Plan's objective of 20,000 acres. Phase II never stated that there was an urgency to remove mature and late successional spruce and mixed conifer stands because spruce had little to no commercial value: "Spruce timber harvests are unlikely as the wood is not as desirable as ponderosa pine." (2005 Phase II FEIS at III-27).

The scoping notice did not state how the Project area is degraded, damaged, or destroyed especially since a resiliency project authority (BHRL 2018) has recently and continues to treat the area. It seems illogical that a resiliency project left a project area in such a condition that it now needs restoration. The Project notice failed to

identify and explain how current conditions are not meeting ecological integrity when historically typed spruce and mixed-spruce stands are being proposed to be converted to pine, a ubiquitous species. The only criteria that the Project proposal appears to address are an historical reference from the 2006 Forest Plan Phase II Amendment of spruce acreage objective and that SS5 pine is absent from the Project area.

The Project proposed to harvest 800 acres dominated by spruce which have been historically typed as spruce and have already been treated in the past based on aerial photography. Group selection purpose is "to regenerate uneven-aged stands in 3-5 acre patch cuts" yet this appears to be redundant. Spruce > 7" dbh would be removed in favor of pine and aspen inclusions. We cannot support removal of mature and late-successional spruce and mixed conifers for reasons given herein. This treatment is driving the spruce ecological system to a deteriorated state and doesn't appear to be a restoration treatment per FS definition of restoration.

1,900 acres of mixed conifer stands are proposed to be patch cuts and retyped to pine. This treatment does not meet the FS definitions of restoration and creates uncertain impacts to marten habitats and corridors. 100 acres of pine-typed stands with spruce understory and aspen inclusions will have succeeding spruce removed. Why isn't the pine also going to be removed and the stand retyped to aspen? Non-commercial spruce and pine (dbh < 9") should be hinged to protect aspen and deciduous shrub communities.

Phase II Amendment does not direct that a single project area must meet a forest-wide SS5 objective within MA 5.1. If spruce in the Project area is out of historical ecological context, we invite discussions to better understand why Project area stands have been typed and previously managed as spruce for decades. For context, BHNH has identified in its inventory and managed databases, that spruce is alleged to be 30,000 acres beyond objective. This didn't happen in a short time period. We'd like to better understand why surplus spruce was not addressed in the recent forest-wide resiliency project (BHRL 2018) which is expected to be viable for at least 10 years (2028). BHRL removed pine and spruce from hardwoods and if spruce is of ecological integrity and restoration concern, why wasn't it included in BHRL? We realize the BHRL questions are beyond the scope of this proposed Project, but these questions are relevant in the context of proposing to employ a "restoration" CE with merchantable timber as a secondary outcome in an area of high importance to BHNH Emphasis Species.

In summary, we ask BHNH to consider that this Project is looking to completely change the habitat conditions by tree species and structural stages to satisfy "ecological integrity" via use of a restoration CE. When in fact, the indicator of the Project area's ecological integrity is already present through marten and marten-preferred habitat components, and other Emphasis Species. Ecological integrity takes more than trees into consideration, as stated above.

Significantly changing the current tree conditions of the project area will cause ecosystem deterioration, which is contrary to the "restoration" BHNH suggests is needed in Project area.

Proposed Hardwood Treatments

200 acres are proposed to be treated under BHRL authority. The site description says that aspen may not have regeneration present. How did BHNH assess the hardwood regeneration; was there regeneration but it was being browsed? Would it be better to state that there has not been recruitment into the clone of various aspen age classes? This demonstrates the reasons for protection of regenerating aspen. And, the site description did not indicate the condition of these residual aspen. Are they overmature inclusions and likely not to regenerate? If so, removing mature spruce to retain dying aspen inclusions does not meet the definition of ecosystem restoration and more than likely, the aspen will die before it can regenerate enough stems/ac to create another age class or another functioning clone.

As stated in our BHRL Draft EIS comments (October 30, 2017 - see BHNH project Administrative file) incorporated by reference, and the attached hinging guideline (Mallett and Deisch 2021), non-commercial conifers should not be "removed" but hinged within hardwood stands to protect sapling and immature aspen from wild and domestic ungulates. Aspen research in western forests discuss that simply removing conifers from hardwoods is only one prong of aspen restoration because here in the Black Hills, aspen require protection in order to be recruited into functioning clones. Without protection, it has been shown over and over in the Black Hills, that removal of all conifers simply allows much easier access to ungulates to browse aspen. This defeats the purpose of aspen recruitment for ecological integrity. And, conifer slash should not be reduced to 18" or less. The long-term protection of more fire-resistant hardwoods far outweighs the temporary fuels

loads of conifer slash. This proposed project lacks design criteria/features to actually meet the intent of forest "restoration" and needs to incorporate attached hinging and taller slash guidelines.

Site Prep and Pine Plantings

Site prep by scarification (SDGFP Comments 2017 BHRL DEIS) and replanting spruce stands to ubiquitous pine are not supported by DOW. The abundance of pine within the project area and the quick reproduction of ponderosa pine in the Black Hills (research by C. Boldt and others) preclude the need for this ground disturbing, archaic process of reforestation.

Additional Data Requested

The following inquiries should be available for public review and included in project analysis:

- * Have criteria used to type stands to spruce, mixed-spruce, pine, mixed hardwood- conifer, and hardwood changed since the 2006 Phase II Amendment?
- * Compare the Project area vegetation, tree species composition, and structural stage composition both before and after treatments in Oatman and Luhtasaari.
- * What is the definition of a "pure" stand of all forest tree types in the context of percent species and structural stage composition?
- * What is the structural stage composition and percentages of structural stages in Project area mixed conifer stands?
- * DOW would like to discuss BHNF's mapping or other means of inventory which have estimated that in 25 years since 1997, spruce is now over 30,000 acres beyond the 1997 and 2006 Plan objective. At that rate of spread, spruce should have been at least 10,800 acres over the 20,000 acre objective by 2006 and yet, Phase II stated it was only 5,000 acres over objective. This appears to suggest that the 30,000 acres over objective are spruce in the younger age classes and should be targeted for thinning. A review of the overall structural stages of spruce and mixed spruce stands would be beneficial.

Other Considerations

The SDGFP snowmobile trails may occur within the Project area. Consultation with Shannon Percy at shannon.percy@state.sd.us 584-2731/584-3896 is required.

Literature Cited

BHNF, Burns, K. 2011. Forest Plan Implementation Clarification. Marten Habitat Connectivity Corridor Management. 3 pp.

Buskirk, S.W. 2002. Conservation Assessment for the American Marten in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mt. Region. Black Hills National Forest, Custer, SD.

DePerno 1998

Fecske, D.M. 2003. Distribution and Abundance of American Martens and Cougars in the Black Hills of South Dakota and Wyoming. Dissertation. SD State University, Brookings.

Fecske, D.M., J.A. Jenks, and V.J. Smith. 2002. Field evaluation of a habitat-relation model for the American marten. Wildl. Soc. Bull. 30(3). Pp 775-782.

Rumble and Anderson 1995

Shepperd, W.D. and M.A. Battaglia. 2002. Ecology, silviculture, and management of Black Hills Ponderosa Pine. USDA Forest Service. Rocky Mt. Research Station. General Tech. Report RMRS-GTR-97.

Smith, J. 2007. Assessing American Marten use of track-plate box surveys for estimating populations size in the Black Hills of South Dakota. Thesis. SD State University, Brookings.

Waite, Blair. 2021. Marten reintroduction biologist and trapper. Pers. Comm. with Shelly Deisch, April 2021.

Hinging Conifer Species To Protect Hardwood Shoots And Saplings

Tree DBH Specific to the Norbeck Wildlife Preserve Project

By David Mallett and Shelly Deisch, SDGFP Division of Wildlife March 2021 - Techniques Paper In-Prep

PURPOSE OF HINGING

Hinging is both a mastered technical skill and art form (Fig. 1). Without some type of intervention such as fire, conifers (ponderosa pine, Black Hills spruce, and planted Douglas Fir) quickly encroach upon and dominate early-successional hardwoods such as aspen, birch, bur oak, green ash, and deciduous shrubs (referred hereafter as "hardwoods"). Releasing hardwoods from conifer dominance can stimulate the emergence of hardwood shoots and saplings. But these emerging stems also need protection from domestic and wild ungulates. The purpose of hinging is to employ a cost-effective technique to provide some protection to emerging stems by using on-site materials (standing live conifers) (Fig. 2) (Kota and Bartos 2010). Most hardwood sites in the Black Hills of South Dakota are isolated and relatively small (< 1 ac) or are found in dwindling inclusions of only 3-12 mature stems. Without protection, the hardwood release treatment is likely ineffective, may result in loss of the clone or inclusion, and may be an economic loss of valuable funds and personnel time. Where large herbivores exist, simply removing conifers is generally insufficient to ensure recruitment of new stems into the clone, stand, or shrub community. Immature regeneration needs to reach up and out of the browse level of ungulates such as livestock, deer, and elk. Protection may need to remain in place for 10 or more years.

CONCEPT OF HINGING

Hinging conifers provides a physical barrier protecting hardwood shoots from browsing by ungulates. This is accomplished by placing individual conifer canopies over hardwoods with branches, which prevents access to stems, or by windrowing conifers around hardwoods (fence), which prevents access to the stand.

A hinging sawyer must be a master of his/her/their skill because hinging can be dangerous. A conifer bole (stem) is back-cut approximately 4 feet above the soil surface (Fig 3). The sawyer must also be able to directionally fell and place conifers in the area to be protected and deter access by browsers. Felling trees is dangerous and hinging can result in a "barber chair" or unexpected snap (Fig. 4).

A back-cut into a standing, live conifer is conducted to create a flexible hinge out of the tree bark and inner cambium layers; leaving the tree bole "attached" to the residual stump at a height of 4 feet. (Fig. 5). The purpose of the tall and aerial angle of the felled and hinged tree, is to deter ungulates from entering the hardwood stand and browsing on vulnerable shoots.

A hinging sawyer is also an artist because he/she/they must be able to assess and visualize the concept of a protected hardwood stand in order to assist in successful recruitment. Protection and successful recruitment into a hardwood stand (or shrub) are goals to achieving functional clones and plant communities.

The sawyer must hinge and fell the conifer into existing or presumed hardwood regeneration. Improper cuts and/or the weight of the felled tree sometimes results in a failed hinge (Fig. 6). The sawyer must be able to identify emerging and existing hardwood shoots, predict where wild and domestic ungulates may enter a hardwood stand, and assess the surrounding landscape to detect the topography which may funnel ungulates into the hardwood stand to be treated. Layout and directional felling are keys to successful hardwood protection (Fig. 7). A hinged tree is not delimbed but left as-is to create a barrier to ungulates. The length of time a hinged tree is effective, depends upon site conditions and annual precipitation. However, the concept is to create as much barrier as possible with available materials. It is better to fully protect a smaller pocket of hardwood regeneration than to randomly scatter each conifer which will only, by itself, protect a few shoots for a short period. Hinging is only as effective as the sawyers' skills and the on-site conifers which will be used to create a short-term, but critical barrier to hungry ungulates. An on-site demonstration of site assessment and hinging is essential to new sawyers and is offered by SDGFP.

ESSENTIAL SITE CONSIDERATIONS

* Conifer Tree Selection and Size

- * Any size live tree (conifer or hardwood) can be hinged, but the probability of hinge breakage and the danger of the tree doing something unexpected increase as the tree size increases

- * Trees 3-9" dbh* are ideal. The larger the dbh and mass of tree, the harder it falls.

- * Trees that cannot be hinged should still be cut at a ground level and left whole (do not slash, lop or scatter).

- * Trees that break-off of hinge and are light enough to lift, should be placed onto the remaining stump and left whole. Break-offs too big to lift should be left whole to make a barrier (do not slash, lop, or scatter).

- * Hinged trees felled into previous hinged trees, may break the hinge of the previous tree. Leave the broken hinged tree whole and do not slash, lop, or scatter).

- * Hinge small trees first and then hinge cut the larger trees that will be felled in that area.

- * A few of the smaller trees may be knocked off their hinge, but this method will make it safer and easier to move around the site.

* Tree Assessment

- * Only hinge or fell live conifers.

- * Do not fell dead or obviously dying conifers (conifers impacted by hail and that only have dead needle ends are not considered dying).

- * Do not fell hardwoods or deciduous shrubs

- * Is the tree leaning one direction?

- * Depending upon the severity of the lean, the tree will most likely have to be hinged in the direction it is leaning.
- * Branch balance and distribution: Does one side of the tree have heavier branches or more branches than the other sides?
- * As with the lean, the direction to hinge the tree will most likely have to be to the side with the heaviest or most branches.
- * With smaller diameter trees (<7"), the lean and branches will not be as important
- * These smaller trees can be manipulated more easily (e.g., pushing by hand or pole) to fall in a desired direction.
- * Do not hinge or fell live conifers with a cavity. Northern flying squirrels may inhabit these trees in the winter. Some owls are cavity nesters February - spring. Bats may have winter hibernation sites.
- * GPS, map, and photograph the cavity if possible, and clearly flag the cavity tree and contact a wildlife biologist for assessment.

* Direction of Felled Hinged Tree

- * This step is critical because if aerial barriers are not created in such a fashion to dissuade ungulates, hinging efficacy will be low and resultant hardwood recruitment will be minimal or clone loss may occur.
- * Work in teams, especially at the start of learning how to hinge and protect an area.
- * Assessment of the standing conifers is essential to a successfully hinged area
- * Layout of hinged conifers should be planned before any cutting and is based on how conifers are arranged in relation to hardwoods.
- * Individual conifer tree assessment is just as important to determine which way the tree should be hinged.
- * Ensure everyone agrees to the layout and is out of the way of each other.
- * The direction a conifer will be hinged will be dependent on which way the sawyer is comfortable taking the tree (based on assessment of lean, branches, wind, etc.) and where the existing and presumed hardwood regeneration is located.
- * For the outer perimeter of hardwood stands, conifers should be hinged up to 100' from the last known hardwood stem which may be hard to find if the stem is less than 1 foot tall.
- * Outer perimeter conifers should be felled to create an outer fence or windrow when possible.

*

- * If the on-site materials are few or extremely scattered, the sawyer must assess the regeneration or where hardwoods are likely to expand and make a judgement call where hinging will provide the best, concentrated protection.

o It is better to hinge a group of trees to form a protected pocket, than to hinge the group of trees in a scattered fashion which will not protect shoots and regeneration.

*

- * Hinging conifers will also remove immediate conifer seed sources. Hinge conifers even if they may not appear to be providing much advantage to the hardwood treatment site as a felled tree.
- * When possible, minimize damage to individual hardwood trees by not felling conifers into an established mature tree.
- * Hinged trees hung up in the canopy of hardwood trees is an extremely dangerous situation and will harm the live hardwood tree.

* Time of Year

- * Best hinged when sap is flowing.
- * Best not to hinge after days and days of extreme cold temperatures. Test a few trees first. Larger diameter may not hinge as well as smaller.
- * If hinging is not working, do not continue to just fell trees without a hinge.

* Wind

- * Light wind speeds are preferred when hinging. Stronger winds may only allow the tree to be felled in the direction they are blowing which may defeat the objective for directional felling and clone protection.

HINGING DIRECTIONS

* The Cut

- * There is only one back cut made to create a hinge
- * The hinge should be between 4-5' above the ground
- * This creates a visual obstruction as well as a physical one
- * The cut should be angled at 30-45[deg] above horizontal
- * The angle allows more leverage with a wedge
- * Angled back cuts typically are more successful in keeping the hinge attached than a flat back cut
- * Keep bar as level as possible to avoid twisting of the tree when it falls
- * Insert wedge as soon as possible behind bar when making cut
- * This keeps the kerf open if tree starts rocking or going backwards
- * This starts tree moving forward
- * When 2/3's through the tree, start cutting more slowly (i.e., feathering throttle, taking small portions)
- * Want to leave as much wood as possible for hinge
- * Keep working the wedge in as far as possible and taking small amounts of wood at a time
- * Monitor tree at all times and as soon as tree starts to fall on its own, stop cutting and move away
- * Hinging trees below 3" dbh is not always practical, but can be effective if there are many in an area
- * Make the back cut lower on the tree (2-4' above the ground)
- * Works better with spruce because they have more branches lower to the ground

- * larger diameters can be hinged.

Citation: Kota, A.M. and D.L. Bartos. 2010. Evaluation of Techniques to Protect Aspen Suckers from Ungulate Browsing in the Black Hills. 25(4). Pp 161-168. Western Journal of Applied Forestry.

TEST

From: [Schuyler, Wendy -FS](#)
To: [Sharp, Charles -FS](#); [Underhill, Jeffrey - FS](#)
Cc: [Anderson, Tracy -FS](#)
Subject: FW: Pine and Aspen Restoration Project - SDGFP Comment Letter
Date: Thursday, May 13, 2021 9:33:24 AM
Attachments: [image001.jpg](#)
[SDGFP Comments Spruce Removal Pine and Aspen Restoration May 2021.pdf](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

Hi Charles and Jeff,

See the email thread below and the attachment. I just received today from Shelly Deisch, SD Game, Fish and Parks, Wildlife Biologist. The SDGFP is requesting the previous comment letter be retracted and this one be their official comment letter.

Wendy



Wendy Schuyler
District NEPA Planner

Forest Service

Hell Canyon Ranger District
Black Hills National Forest

p: 605-673-9361

f: 605-673-9208

wendy.schuyler@usda.gov

1019 North 5th St.
Custer, SD 57730

www.fs.usda.gov/blackhills



Caring for the land and serving people

From: Deisch, Shelly <Shelly.Deisch@state.sd.us>
Sent: Thursday, May 13, 2021 9:28 AM
To: Schuyler, Wendy -FS <wendy.schuyler@usda.gov>
Cc: paul.coughlin@state.sd.us
Subject: FW: Pine and Aspen Restoration Project - SDGFP Comment Letter

Wendy,

The automatic e-mail reply from Tracy indicated you are the Acting Ranger in her absence. Please see the email below and the attached letter. Let me know if there is anything else I need to do.

Shelly





SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

4130 ADVENTURE TRAIL | RAPID CITY, SD 57702

May 13, 2021

Tracy L. Anderson, Hell Canyon District Ranger
Black Hills National Forest
1019 North 5th Street
Custer, SD 57730

Deadline: May 14, 2021

Email to: <https://cara.ecosystem-management.org/Public/CommentInput?project=59737>
jeffrey.underhill@usda.gov kris.hennings@usda.gov

Subject line: Pine and Aspen Restoration Project

Dear Ranger Anderson,

The Department of Game, Fish, and Parks (SDGFP), Division of Wildlife (DOW) submits comments on the above-referenced Project (Project). The DOW has reviewed the Hell Canyon Ranger District's Scoping Notice to significantly reduce native Black Hills white spruce (*Picea glauca*) across 2,800 acres northwest of Deerfield Reservoir via Categorical Exclusion (CE) (36 CFR 220.6(e)(25)). CE 25 is a new CE for meeting restoration objectives and other watershed and habitat conditions (Federal Register Vol. 85, No. 224, Nov. 19, 2020 at 73620–73632). CE 25 has never been implemented on BHNF and this demonstration project is of first impression. Proposed activities include pine plantings and likely scarification site prep, spruce thinning, and targeted spruce timber harvesting. The project proposes to treat another 200 acres of aspen per the 2018 Black Hills Resilient Landscapes Project (BHRL). A deadline extension of May 14, 2021 is generous and offers us the ability to visit the Project area. The following comments are from a wildlife habitat perspective.

BHNF has proposed a need to *"increase the occurrence of ponderosa pine and aspen in stands that historically contained higher levels of these species but are dominated by spruce."* A secondary need, per CE 25, is to provide commercial products to support the forest products industry.

DOW has historically supported vegetation diversity across the landscape, especially the early and late successional forested plant communities. These forests support habitats for those species which rise to a level of ecological concern (Emphasis Species) because their habitats are disproportionately critical to their viability and distribution across the landscape. Emphasis Species represent the need for additional conservation measures, viability assessments, and vegetation management sideboards per FS Directives.

For early successional forests, we have extensively commented in the past on the need to treat aspen and hardwood stands for release and recruitment into mature functioning systems. In order to be recruited into functional systems, some form of protection is necessary as supported by DOW knowledge and scientific literature. We support hardwood management under certain ecological and scientifically tested conditions stated herein. While ponderosa pine is the dominant conifer in western South Dakota, DOW also recognizes the loss of mature and late successional pine structural stages (SS's) for various reasons, and supports the need for this

end of the ecological scale to be represented forest-wide (Forest Plan SS's Objectives) when it compliments or does not conflict with other ecological considerations as stated herein. Spruce is an uncommon conifer in the Black Hills, and we have historically supported management of unique mature and late successional spruce and mixed conifer communities.

Where these two ecological processes and forest seral stages (early and late) meet, there are resource conditions such as the habitats described in the CE scoping notice. Nature does not consistently and clearly divide ecological processes into neat, separate seral stage compartments across a landscape. Because of this, there are flora and fauna Emphasis Species which inhabit these mixed ecological scenarios, adding to overall landscape diversity. The unique conditions of pine, spruce, and aspen all converging within the delineated project area requires a "hard look" evaluation of how BHNH is proposing to drive the ecological systems with insufficient considerations given to these uncommon mixes of habitats.

We support removing some successional stages of spruce (such as seedlings, saplings, and immature spruce) which have "*rapidly*" (Project narrative term) expanded for various reasons outside spruce's ecological zone. Historical vegetation records reach back limited years yet are used as the reference where BHNH choses to set its management benchmark (Historical Range of Variation - HRV) within the Phase II Amended Land and Resource Management Plan. We would like to discuss historic and recent vegetation SS inventories and review where spruce has expanded.

We appreciate the scoping notice's transparency that BHNH intends to continue to target removal of spruce of various SS's up to 30,000 acres. This demonstrates that such removals are foreseeable, connected, and cumulative effects actions. These foreseeable actions could invoke 10-12 CE 25's over time, which rises to the NEPA analysis level of a forest-wide EIS. However, a forest-wide EIS and ROD to approve spruce removal is lacking at this time. The Phase II Plan Amendment only anticipated a maximum of 5,000 acres of spruce removal within the lifetime of the Plan, not 30,000. Therefore, we request the consideration of a forest-wide EIS instead of incrementally removing spruce using CE 25.

We suggest that this Project *as proposed* incorrectly presumes that CE 25 is the appropriate authority to remove various SS's of spruce and to retype mixed conifer stands to pine; a species which dominates the forested landscape. Development of the scoping notice has missed that there are *extraordinary circumstances* and therefore, an EA or EIS is warranted. A CE Decision Memo must include a finding that no *extraordinary circumstances* exist and as proposed, this Project cannot meet that NEPA criteria. We have identified *extraordinary circumstances* and assert that *uncertain* impacts on at least one FS Region 2 Sensitive Species (R2SS), the American marten, will result due to this Project. *Uncertainty* precludes use of CE authority. We suggest that the proposed Project seeks unprecedented actions which rise to a level of more rigorous, *hard look* NEPA analysis, and treatment alternatives.

Despite our past requests to retype treated pine stands to hardwoods after a hardwood release, the response has been that database and inventory exercise are outside the scope of a project. Another example is in our 10-30-2017 BHRL DEIS comment letter and BHNH's response to such request. Yet, this Project is proposing to retype spruce to ponderosa pine as part of the Project. We seek clarification. We also recommend that removal of conifers in hardwood stands should be given the same ecological restoration and inventory considerations and be retyped to hardwoods.

We invite engagement with BHNF because there are likely opportunities to take a hardlook at other areas across the landscape which may better fit into CE 25, an EA, or an EIS at a project or forest-wide level for "restoration" by removing some SS's of spruce. As outlined herein, we provide information for BHNF's consideration. We extend an invitation for conversations with the Hell Canyon District and BHNF Forest Biologists to discuss the various Emphasis Species which will be impacted by employment of CE 25, as proposed. Thank you for the opportunity to comment.

Sincerely,



Shelly Deisch, Public Lands Liaison and Sr. Wildlife Habitat Biologist
shelly.deisch@state.sd.us Desk: 605.394.1756

CC:

Kevin Robling, Department Secretary
Tom Kirschenmann, Division Director
Paul Coughlin, Terrestrial Habitat Program Administrator
Chad Switzer, Terrestrial Wildlife Program Administrator
Trenton Haffley, Regional Terrestrial Resources Supervisor
Mike Klosowski, Regional Supervisor
John Kanta, Terrestrial Section Chief
David Mallett, Wildlife Biologist
Shannon Percy, Parks and Recreation

Addendum
Pine and Aspen Restoration Project through Removal of White Spruce

Use of CE Authority. Uncertainty to R2SS, and More Rigorous NEPA is Warranted

Forest Service Handbook (FSH) 1909.15, Chapter 30, tiered to the Code of Federal Regulations (CFR) provides guidance to the Forest Service (FS) for CE determination, such as whether “extraordinary circumstances” exist, and if the proposed action warrants further analysis and documentation in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) (36 CFR 220.6(b)). Scoping is the means to identify the presence of extraordinary circumstances that warrant a more rigorous and higher level of NEPA.

One resource condition that must be considered is the presence of Region 2 Sensitive Species (R2SS). The American marten (*Martes americana*) is a reintroduced species from extirpation and has met the criteria as a R2SS (and is a BHNF Species of Local Concern (SOLC)). Therefore, the responsible official must determine the degree of potential effects on R2SS: *“If the degree of potential effects raises uncertainty over its significance, then an extraordinary circumstance exists, precluding the use of a categorical exclusion.”*

FSH states that the “mere presence of a sensitive species” in the Project area does not preclude use of a CE but asks the FS to determine if there is a “cause-effect relationship between the proposed action and the potential effects on resource conditions”. The potential effects on resource conditions is not confined to the narrow assessment of only marten corridors. Potential “extraordinary circumstances” include the uncertainty if marten occupy habitats and use corridors in a proposed Project area and how proposed vegetation treatments may impact marten resources, distribution, movements, and risks to predation.

The Project proposal recognizes that the small delineated area provides marten corridors per the Phase II Plan Amendment and acknowledges that marten are or could be in the Project area. Objective 221 states that BHNF will conserve or enhance habitat (not just corridors) for R2SS and SOCL. BHNF has had extensive and significant landscape-scale habitat and resource condition changes since the 2003 marten habitat model (Fecske 2003) and the 2005-2006 Phase II Amendment NEPA efforts. For example, across the forest and within the Project area, both mature and late-successional pine and spruce have been significantly impacted and reduced by mountain pine beetle mortality, vegetation treatments, intense harvests, and other mortality factors such as fire and storms which are additive to natural background mortality levels. These landscape scale events have changed vegetation conditions on the forest unanticipated by the 2006 Phase II Forest Plan Amendment. Various structural stages of conifer stands were recently treated or harvested in the Oatman and Luhtasaari timber sales. Within the Project area, past group selection treatments in spruce-typed stands are stark from aerial photography.

Uncertainty in the impacts of the proposed Project lies, in part, that DOW does not have marten abundance index or population estimate since these resource condition changes. Smith (2007) tested track plate methods to estimate marten occupancy. However, BHNF nor DOW have conducted recent forest-wide population estimate nor do either agency have a recent re-analysis of forest-wide marten habitat abundance (Fecske 2003) to meet Phase II Amendment directives such as Objective 211. Fifteen years have passed since the Phase II Amendment FEIS and ROD. Forest-wide monitoring of marten habitat acreage was last published for FY 2013-2014. With an increase in spruce abundance and distribution, we cannot erroneously

presume that younger age classes and early SS's equate to quality marten habitat or corridors. Marten depend upon mature and late successional spruce and mixed conifer stands.

Black Hills 2018 Resilient Landscapes Biological Specialist's report indicated that the proposed and selected action could cause *direct* marten mortality compared to no action alternative. Further fragmentation and loss of habitat (extensive removal of mature and late-successional pine and limited spruce removal) was expected in MA 5.1. Road construction in BHRL was assessed as creating additional habitat degradation and disturbances to marten. These cause-effect actions in and adjacent to the Project area (Oatman and Luhtasaari) together with the proposed Project, leave an uncertainty to marten and its habitat components (such as corridors, logs, CWD, and prey such as small mammals). Again, BHNH is precluded from using CE Authority, and preparation of an EA or EIS is warranted (FSH 1909.15, 31.2, 36 CFR 220.6(b)(2), FSH 1909.15 Chapter 10 Section 1.6 Exhibit 01)). Scoping identifies past, present, or reasonably foreseeable future actions with the potential to create uncertainty over the significance of cumulative effects and should be commensurate with project complexity (FSH 1909.15 Chapter 30 31.1).

The cause-effect relationship of the proposed Project includes uncertainty to the impacts to R2SS including but not limited to American marten, northern flying squirrel (*Glaucomys sabrinus*) which prefer mixed conifer stands, Cooper's snail (*Oreohelix strigose cooperi*), and sensitive plants such as prairie moonwort (*Botrychium campestre*) and lesser yellow lady's-slipper (*Cypripedium parviflorum*). It is "reasonably foreseeable" that the proposed Project includes uncertain risks of marten displacement out of the Project area and adjacent preferred habitats due to this CE Project and other more recent projects. It is reasonably foreseeable that BHNH intends on conducting similar CE 25 projects throughout marten habitats which are "connected actions". Lastly, the loss of mature and late successional conifers through various mortalities listed above has resulted in "significant cumulative effects", precluding the use of CE Authority and an EA or EIS is warranted

American Marten Life Requirements and Black Hills Status

Marten have very distinct habitat requirements of mature and late successional forests. Habitat alterations in these limited seral and structural stages increase the risk of marten displacement, declines in an already limited population, or at worst, extirpation. Thus, the species indicates *ecosystem integrity* because declines in its distribution and abundance are a barometer to *ecosystem deterioration* (Fecske et al. 2002).

Fecske (2003) provides some historical context of the long-term persistence of the Project area's habitat because in the late 1800's early 1900's, a trapper was paid for marten pelts which he trapped between Deadwood and Newcastle. In 1929-1930, a local trapper trapped 17 marten in the Beaver Creek Drainages near the SD-WY border, near or including the Project area. This indicates that mature and late successional spruce and mixed conifer stands have existed in the Project area for well over a century and have existed in this region tree generation after tree generation. Between 1930 and 1979, no records exist for marten and were thought to be extirpated from the Black Hills. By 1976, DOW began planning to reintroduce the native predator and furbearer. There was an identified need to have marten, a species *integral to the ecology and integrity of dense, mature spruce and pine habitats*, return to the Black Hills. Various public groups have an interest in this native predator. Two reintroduction phases occurred in the 1980's and 1990's (SDGFP Internal Files, Fecske 2003, and B. Waite, reintroduction biologist, 2021 Pers. Comm). One reintroduction site is near the Project area (SDGFP Internal Files, Fecske 2003).

Marten have a low reproduction potential with only 1 pup/year. Past research has indicated that marten occurrence is associated with areas of high precipitation, near prior release locations, and mature aged conifer forests (Smith 2007). Marten are an indicator of late successional forest in 9 out of 13 forests in which they are found. They need deadfall, both leaning and downed, for hunting and traveling. The Project area is potentially one of the most important examples of marten habitat along Cold Creek and Castle Creek drainages. Mature and late successional spruce, pine, and mixed conifer habitats are already fragmented. Further fragmentation as proposed in this Project could *“exacerbate bottleneck effects and threaten long-term viability..... and long-term planning include protection of mature forest stands surrounding occupied areas.”* (Smith 2007). Mature and late-successional pine stands are also critical to assuring connectivity corridors are linked to mature conifer stands. Marten life requirements, available and preferred habitats, and adjoining habitats are critical to Project planning.

The most significant marten predator are great horned owls (B. Waite, 2021, Pers. Comm). Great horned owls inhabit a wide variety of habitats, but have a component of being more open. As BHNF becomes more open due to MPB, logging, fire, and other tree mortality factors, there are antidotal observations that great horned owls may be more abundant; at least their preferred open habitats are more abundant. The dense cover provided by mature and late successional conifers provides more hiding and escape cover for marten. Opening the Project area canopy cover and fragmenting connective canopies may increase mortality risks to marten.

BHNF Plan standard 3215 requires retention of at least 50% canopy cover but canopy cover can be denser. Thinning to remove overstory in dense areas to 50% is minimum and every effort should be made to retain at or above 50% of spruce, pine or mixed-conifer in SS's 3B, 3C, 4B, 4C, and 5 with at least 50% of the BA in conifer species and at least 40% of the BA in white spruce regardless of forest typed conifer stands (Buskirk 2002, BHNF Burns 2011). Corridor linkages must expand beyond the Project area to provide quality marten habitat for the Northern Hills subpopulations. Logs and CWD must also be retained (Standard 2308).

The responsible official for this proposed Project shall use the best available scientific information (BASI) (36 CFR 219.3). Use of BASI must be documented for the project analysis/assessment, the project decision, and the monitoring program. Local research should be primary to other sources. For example, while marten may not use or depend on pine or mixed spruce-pine stands elsewhere in its range, it uses and depends upon these mixed stands in the Black Hills for their life and habitat requirements (Fecske 2003). Marten are disconnected from other marten populations outside the Black Hills, and are potentially disconnected between two subpopulations. Any project which creates uncertainty in how actions may impact a limited marten subpopulation the northern hills, may jeopardize not only that northern tier, but may jeopardize the Black Hills population as a whole. There is a second subpopulation in Custer State Park and Norbeck Wildlife Preserve. The two existing subpopulations already have challenges and high risks of exchanging individuals through migration where connected corridors are lacking.

Emphasis Species

The FS Region 2 Forester identified certain species as “sensitive” and for which population viability is a concern:

- a. Significant current or predicted downward trends in population numbers or density.

b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution (FSM 2670.5)." (2005 Phase II Amendment FEIS a at III-75).

The rationale for SOLC final determination was: *"Limited population and habitat, extremely low reproductive rate, and single small population on the Forest. Extremely susceptible to disease and parasites. Need management to maintain habitat and undisturbed areas."*

Management Indicator Species within the project area include ruffed grouse and Golden crowned kinglet. Former DOW employees were interviewed recently and stated that the Project area has some of the best ruffed grouse habitat due to the mix of spruce and aspen. Historically, some of the highest occurrences of ruffed grouse existed for the western Black Hills because the grouse depended upon both early and late successional habitats year-round.

Demand Species: Spruce and mixed spruce-pine communities provide cover (hiding, screening, and winter and summer thermal) for deer and elk and their young (DePerno 1998.). Greater than 40% canopy cover is required for wild turkey (*Meleagris gallopavo merriami*) (Rumble and Anderson 1996)

FS Definition of Objective

FS defines an objective as, *"Concise statement of desired measurable results intended to promote achievement of specific goals. Attainment of objectives is limited by the application of standards and guidelines. Objectives should be expressed in terms of outcomes, not actions; and must be attainable within the fiscal capability of the unit, determined through a trend analysis of the recent past budget obligations for the unit (3 to 5 years)"* What are the expected costs of the CE NEPA, treatments, and harvest?

FS Definition of Restoration and Ecosystem Restoration

CE 25 relies on "restoration". FS definition of restoration (<https://www.fs.fed.us/restoration/>) includes *"creating and maintaining healthy, resilient forests capable of delivering all the benefits that people get from them: clean air and water, carbon sequestration, habitat for native fish and wildlife, forest products, opportunities for outdoor recreation, and more.....Monitoring and evaluation of restoration projects are essential adaptive management steps for achieving sustainable ecosystems..... Restoration activities will complement management to maintain conditions in areas with ecological integrity.....The expectation is that forest restoration treatments will lead to forest resilience and a lower probability of a catastrophic disturbance and that consequently, more carbon will continue to be sequestered than would otherwise occur without the treatment."*

"Assessing current and potential future conditions should result in a detailed description of the composition, structure, pattern, and ecological processes of the ecosystem as it moves along an ecological trajectory through time. Moving along a trajectory means that ecosystems are not static and may have changing characteristicsRestoration spans a number of initiatives in various program areas, including the invasive species strategy; recovery of areas affected by high severity fires, hurricanes, and other catastrophic disturbances; fish habitat restoration and remediation; riparian area restoration; conservation of threatened, endangered, and sensitive species."

For purposes of interagency discussions, we are unclear how established, historically typed spruce and mixed conifer stands do not provide *composition, structure, pattern, and ecological*

processes necessary to facilitate terrestrial and aquatic ecosystems sustainability, resilience, and health under current and future conditions. In 200 acres, there is proposed to be 5-acre group retention of “large” diameter pine (no dbh given) to “*promote*” (the narrative did not say “*to retain*”) late successional pine. The mere under-representation of SS5 appears that BHNF is trying to create an ecological component on 200 acres where it does not exist and may have existed at one time but for MPB and/or recent harvest treatments. We support allowing mature pine stands the time to become SS5, but that opportunity has existed across the forest for decades and more specifically since 2006 Phase II Amendment. We know of areas left untreated in one project as “future late succession” only to have another harvest entry in less than 10 years because “the mature overstory is ready for harvest.” The scoping notice negated to describe why pine stands treated in Oatman and Luhtasaari did not identify, retain, and recruit pine into SS5 or future SS5 under a *resiliency* directive (BHRL 2018). The Project area is 10,712 acres and all pine SS’s are not expected to be found on all acres, especially within small delineated project areas. Project analysis should discuss why now and why here is BHNF choosing to drive the ecological system to create SS5 where it doesn’t exist, in favor of removing or at least degrading late successional spruce and mixed conifer stands.

Based on FS restoration definitions and guidance, not having SS5 within a small Project area does not appear meet the ecological site conditions for an ecological restoration CE. Rather, the historical stands of mature and mixed conifer meet MA 5.1 desired conditions and Objective LVD 239 for a *mosaic of forest structure and diversity*. Removing mature and late successional spruce in mixed stands in a forest dominated by pine and replanting to pine will actually reduce mosaic forests. Mature and late successional stands of spruce are disproportionately important to providing overall forest ecological integrity, diversity, functioning, and *resilience* and should not be treated in this particular area.

Shepperd and Battaglia (2002) stated that the furthest western occurrence of white spruce (*Picea glauca*) is in the Black Hills. There are two or three spruce community types which disproportionately provide habitat for species not available in other forested types. Because of the limited abundance and spatial distribution of spruce community types, they are important to the BHNF’s goal of species diversity across the landscape.

The scoping notice states that the Project is for ecological restoration to be consistent with historical vegetation conditions. Ecological restoration is defined as: “*The process of assisting the recovery of an ecosystem that has been **degraded, damaged, or destroyed**. Ecological restoration focuses on reestablishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystem sustainability, resilience, and health under current and future condition.....ecological restoration may seek a historical reference condition.*” (36 CFR 219.19 and FSH 1909.12).

Upon review of the BHNF Phase II Amendment FEIS, spruce was not a common or dominant conifer species across the landscape. The EIS stated that spruce was maybe 5,000 acres over its Plan’s objective of 20,000 acres. Phase II never stated that there was an urgency to remove mature and late successional spruce and mixed conifer stands because spruce had little to no commercial value: “*Spruce timber harvests are unlikely as the wood is not as desirable as ponderosa pine.*” (2005 Phase II FEIS at III-27).

The scoping notice did not state how the Project area is *degraded, damaged, or destroyed* especially since a *resiliency* project authority (BHRL 2018) has recently and continues to treat the area. It seems illogical that a *resiliency* project left a project area in such a condition that it

now needs restoration. The Project notice failed to identify and explain how current conditions are not meeting ecological integrity when historically typed spruce and mixed-spruce stands are being proposed to be converted to pine, a ubiquitous species. The only criteria that the Project proposal appears to address are an historical reference from the 2006 Forest Plan Phase II Amendment of spruce acreage objective and that SS5 pine is absent from the Project area.

The Project proposed to harvest 800 acres dominated by spruce which have been historically typed as spruce and have already been treated in the past based on aerial photography. Group selection purpose is "*to regenerate uneven-aged stands in 3-5 acre patch cuts*" yet this appears to be redundant. Spruce > 7 " dbh would be removed in favor of pine and aspen inclusions. We cannot support removal of mature and late-successional spruce and mixed conifers for reasons given herein. This treatment is driving the spruce ecological system to a deteriorated state and doesn't appear to be a restoration treatment per FS definition of restoration.

1,900 acres of mixed conifer stands are proposed to be patch cuts and retyped to pine. This treatment does not meet the FS definitions of restoration and creates uncertain impacts to marten habitats and corridors. 100 acres of pine-typed stands with spruce understory and aspen inclusions will have succeeding spruce removed. Why isn't the pine also going to be removed and the stand retyped to aspen? Non-commercial spruce and pine (dbh < 9") should be hinged to protect aspen and deciduous shrub communities.

Phase II Amendment does not direct that a single project area must meet a forest-wide SS5 objective within MA 5.1. If spruce in the Project area is out of historical ecological context, we invite discussions to better understand why Project area stands have been typed and previously managed as spruce for decades. For context, BHNF has identified in its inventory and managed databases, that spruce is alleged to be 30,000 acres beyond objective. This didn't happen in a short time period. We'd like to better understand why surplus spruce was not addressed in the recent forest-wide *resiliency* project (BHRL 2018) which is expected to be viable for at least 10 years (2028). BHRL removed pine and spruce from hardwoods and if spruce is of ecological integrity and restoration concern, why wasn't it included in BHRL? We realize the BHRL questions are beyond the scope of this proposed Project, but these questions are relevant in the context of proposing to employ a "*restoration*" CE with merchantable timber as a secondary outcome in an area of high importance to BHNF Emphasis Species.

In summary, we ask BHNF to consider that this Project is looking to completely change the habitat conditions by tree species and structural stages to satisfy "*ecological integrity*" via use of a *restoration* CE. When in fact, the indicator of the Project area's ecological integrity is already present through marten and marten-preferred habitat components, and other Emphasis Species. Ecological integrity takes more than trees into consideration, as stated above. Significantly changing the current tree conditions of the project area will cause *ecosystem deterioration*, which is contrary to the "*restoration*" BHNF suggests is needed in Project area.

Proposed Hardwood Treatments

200 acres are proposed to be treated under BHRL authority. The site description says that aspen may not have regeneration present. How did BHNF assess the hardwood regeneration; was there regeneration but it was being browsed? Would it be better to state that there has not been recruitment into the clone of various aspen age classes? This demonstrates the reasons for protection of regenerating aspen. And, the site description did not indicate the condition of these residual aspen. Are they overmature inclusions and likely not to regenerate? If so, removing mature spruce to retain dying aspen inclusions does not meet the definition of

ecosystem restoration and more than likely, the aspen will die before it can regenerate enough stems/ac to create another age class or another functioning clone.

As stated in our BHRL Draft EIS comments (October 30, 2017 – see BBNF project Administrative file) incorporated by reference, and the attached hinging guideline (Mallett and Deisch 2021), non-commercial conifers should not be “*removed*” but hinged within hardwood stands to protect sapling and immature aspen from wild and domestic ungulates. Aspen research in western forests discuss that simply removing conifers from hardwoods is only one prong of aspen restoration because here in the Black Hills, aspen require protection in order to be recruited into functioning clones. Without protection, it has been shown over and over in the Black Hills, that removal of all conifers simply allows much easier access to ungulates to browse aspen. This defeats the purpose of aspen recruitment for ecological integrity. And, conifer slash should not be reduced to 18” or less. The long-term protection of more fire-resistant hardwoods far outweighs the temporary fuels loads of conifer slash. This proposed project lacks design criteria/features to actually meet the intent of forest “restoration” and needs to incorporate attached hinging and taller slash guidelines.

Site Prep and Pine Plantings

Site prep by scarification (SDGFP Comments 2017 BHRL DEIS) and replanting spruce stands to ubiquitous pine are not supported by DOW. The abundance of pine within the project area and the quick reproduction of ponderosa pine in the Black Hills (research by C. Boldt and others) preclude the need for this ground disturbing, archaic process of reforestation.

Additional Data Requested

The following inquiries should be available for public review and included in project analysis:

- Have criteria used to type stands to spruce, mixed-spruce, pine, mixed hardwood-conifer, and hardwood changed since the 2006 Phase II Amendment?
- Compare the Project area vegetation, tree species composition, and structural stage composition both before and after treatments in Oatman and Luhtasaari.
- What is the definition of a “*pure*” stand of all forest tree types in the context of percent species and structural stage composition?
- What is the structural stage composition and percentages of structural stages in Project area mixed conifer stands?
- DOW would like to discuss BBNF's mapping or other means of inventory which have estimated that in 25 years since 1997, spruce is now over 30,000 acres beyond the 1997 and 2006 Plan objective. At that rate of spread, spruce should have been at least 10,800 acres over the 20,000 acre objective by 2006 and yet, Phase II stated it was only 5,000 acres over objective. This appears to suggest that the 30,000 acres over objective are spruce in the younger age classes and should be targeted for thinning. A review of the overall structural stages of spruce and mixed spruce stands would be beneficial.

Other Considerations

The SDGFP snowmobile trails may occur within the Project area. Consultation with Shannon Percy at shannon.percy@state.sd.us 584-2731/584-3896 is required.

Literature Cited

BHNF, Burns, K. 2011. Forest Plan Implementation Clarification. Marten Habitat Connectivity Corridor Management. 3 pp.

Buskirk, S.W. 2002. Conservation Assessment for the American Marten in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mt. Region. Black Hills National Forest, Custer, SD.

DePerno, C.S. 1998. Habitat selection of a declining white-tailed deer herd in the central Black Hills, South Dakota and Wyoming. M.S. Thesis, SD State University, Brookings.

Fecske, D.M. 2003. Distribution and Abundance of American Martens and Cougars in the Black Hills of South Dakota and Wyoming. Dissertation. SD State University, Brookings.

Fecske, D.M., J.A. Jenks, and V.J. Smith. 2002. Field evaluation of a habitat-relation model for the American marten. Wildl. Soc. Bull. 30(3). Pp 775-782.

Rumble, M. A.; Anderson, S.H. 1996. A test of the habitat suitability model for Merriam's wild turkeys. *In*: Dickson, James G., ed. Proceedings of the Seventh National Wild Turkey Symposium: 24-26 May, 1995, Rapid City, South Dakota. Mechanicsburg, PA: Stackpole Books: 165-173.

Shepperd, W.D. and M.A. Battaglia. 2002. Ecology, silviculture, and management of Black Hills Ponderosa Pine. USDA Forest Service. Rocky Mt. Research Station. General Tech. Report RMRS-GTR-97.

Smith, J. 2007. Assessing American Marten use of track-plate box surveys for estimating populations size in the Black Hills of South Dakota. Thesis. SD State University, Brookings.

Waite, Blair. 2021. Marten reintroduction biologist and trapper. Pers. Comm. with Shelly Deisch, April 2021.

Hinging Conifer Species To Protect Hardwood Shoots And Saplings Tree DBH Specific to the Norbeck Wildlife Preserve Project

By David Mallett and Shelly Deisch, SDGFP Division of Wildlife
March 2021 - Techniques Paper In-Prep

PURPOSE OF HINGING

Hinging is both a mastered technical skill and art form (Fig. 1). Without some type of intervention such as fire, conifers (ponderosa pine, Black Hills spruce, and planted Douglas Fir) quickly encroach upon and dominate early-successional hardwoods such as aspen, birch, bur oak, green ash, and deciduous shrubs (referred hereafter as “hardwoods”). Releasing hardwoods from conifer dominance can stimulate the emergence of hardwood shoots and saplings. But these emerging stems also need protection from domestic and wild ungulates. The purpose of hinging is to employ a cost-effective technique to provide some protection to emerging stems by using on-site materials (standing live conifers) (Fig. 2) (Kota and Bartos 2010). Most hardwood sites in the Black Hills of South Dakota are isolated and relatively small (< 1 ac) or are found in dwindling inclusions of only 3-12 mature stems. Without protection, the hardwood release treatment is likely ineffective, may result in loss of the clone or inclusion, and may be an economic loss of valuable funds and personnel time. Where large herbivores exist, simply removing conifers is generally insufficient to ensure recruitment of new stems into the clone, stand, or shrub community. Immature regeneration needs to reach up and out of the browse level of ungulates such as livestock, deer, and elk. Protection may need to remain in place for 10 or more years.

CONCEPT OF HINGING

Hinging conifers provides a physical barrier protecting hardwood shoots from browsing by ungulates. This is accomplished by placing individual conifer canopies over hardwoods with branches, which prevents access to stems, or by windrowing conifers around hardwoods (fence), which prevents access to the stand.

A hinging sawyer must be a master of his/her/their skill because hinging can be dangerous. A conifer bole (stem) is back-cut approximately 4 feet above the soil surface (Fig 3). The sawyer must also be able to directionally fell and place conifers in the area to be protected and deter access by browsers. Felling trees is dangerous and hinging can result in a “barber chair” or unexpected snap (Fig. 4).

A back-cut into a standing, live conifer is conducted to create a flexible hinge out of the tree bark and inner cambium layers; leaving the tree bole “attached” to the residual stump at a height of 4 feet. (Fig. 5). The purpose of the tall and aerial angle of the felled and hinged tree, is to deter ungulates from entering the hardwood stand and browsing on vulnerable shoots.

A hinging sawyer is also an artist because he/she/they must be able to assess and visualize the concept of a protected hardwood stand in order to assist in successful recruitment. Protection *and* successful recruitment into a hardwood stand (or shrub) are goals to achieving functional clones and plant communities.

The sawyer must hinge and fell the conifer into existing or presumed hardwood regeneration. Improper cuts and/or the weight of the felled tree sometimes results in a failed hinge (Fig. 6). The sawyer must be able to identify emerging and existing hardwood shoots, predict where wild and domestic ungulates may enter a hardwood stand, and assess the surrounding landscape to detect the topography which may funnel ungulates into the hardwood stand to be treated. Layout and directional felling are keys to successful hardwood protection (Fig. 7). A hinged tree is not delimbed but left as-is to create a barrier to ungulates. The length of time a hinged tree is effective, depends upon site conditions and annual precipitation. However, the concept is to create as much barrier as possible with available materials. It is better to fully protect a smaller pocket of hardwood regeneration than to randomly scatter each conifer which will only, by itself, protect a few shoots for a short period. Hinging is only as effective as the sawyers' skills and the on-site conifers which will be used to create a short-term, but critical barrier to hungry ungulates. An on-site demonstration of site assessment and hinging is essential to new sawyers and is offered by SDGFP.

ESSENTIAL SITE CONSIDERATIONS

- Conifer Tree Selection and Size

- Any size live tree (conifer or hardwood) can be hinged, but the probability of hinge breakage and the danger of the tree doing something unexpected increase as the tree size increases
 - Trees 3-9" dbh* are ideal. The larger the dbh and mass of tree, the harder it falls.
- Trees that cannot be hinged should still be cut at a ground level and left whole (do *not* slash, lop or scatter).
- Trees that break-off of hinge and are light enough to lift, should be placed onto the remaining stump and left whole. Break-offs too big to lift should be left whole to make a barrier (do not slash, lop, or scatter).
- Hinged trees felled into previous hinged trees, may break the hinge of the previous tree. Leave the broken hinged tree whole and do not slash, lop, or scatter).
- Hinge small trees first and then hinge cut the larger trees that will be felled in that area.
 - A few of the smaller trees may be knocked off their hinge, but this method will make it safer and easier to move around the site.

- Tree Assessment

- Only hinge or fell live conifers.
 - Do not fell dead or obviously dying conifers (conifers impacted by hail and that only have dead needle ends are not considered dying).
 - Do not fell hardwoods or deciduous shrubs
- Is the tree leaning one direction?
 - Depending upon the severity of the lean, the tree will most likely have to be hinged in the direction it is leaning.
- Branch balance and distribution: Does one side of the tree have heavier branches or more branches than the other sides?
 - As with the lean, the direction to hinge the tree will most likely have to be to the side with the heaviest or most branches.
- With smaller diameter trees (<7"), the lean and branches will not be as important
 - These smaller trees can be manipulated more easily (e.g., pushing by hand or pole) to fall in a desired direction.
- Do not hinge or fell live conifers with a cavity. Northern flying squirrels may inhabit these trees in the winter. Some owls are cavity nesters February – spring. Bats may have winter hibernation sites.
 - GPS, map, and photograph the cavity if possible, and clearly flag the cavity tree and contact a wildlife biologist for assessment.

- Direction of Felled Hinged Tree

- This step is critical because if aerial barriers are not created in such a fashion to dissuade ungulates, hinging efficacy will be low and resultant hardwood recruitment will be minimal or clone loss may occur.
- Work in teams, especially at the start of learning how to hinge and protect an area.
- Assessment of the standing conifers is essential to a successfully hinged area
- Layout of hinged conifers should be planned before any cutting and is based on how conifers are arranged in relation to hardwoods.
- Individual conifer tree assessment is just as important to determine which way the tree should be hinged.
- Ensure everyone agrees to the layout and is out of the way of each other.
- The direction a conifer will be hinged will be dependent on which way the sawyer is comfortable taking the tree (based on assessment of lean, branches, wind, etc.) and where the existing and presumed hardwood regeneration is located.
- For the outer perimeter of hardwood stands, conifers should be hinged up to 100' from the last known hardwood stem which may be hard to find if the stem is less than 1 foot tall.
- Outer perimeter conifers should be felled to create an outer fence or windrow when possible.

- If the on-site materials are few or extremely scattered, the sawyer must assess the regeneration or where hardwoods are likely to expand and make a judgement call where hinging will provide the best, concentrated protection.
 - It is better to hinge a group of trees to form a protected pocket, than to hinge the group of trees in a scattered fashion which will not protect shoots and regeneration.
 - Hinging conifers will also remove immediate conifer seed sources. Hinge conifers even if they may not appear to be providing much advantage to the hardwood treatment site as a felled tree.
 - When possible, minimize damage to individual hardwood trees by not felling conifers into an established mature tree.
 - Hinged trees hung up in the canopy of hardwood trees is an extremely dangerous situation and will harm the live hardwood tree.
- Time of Year
- Best hinged when sap is flowing.
 - Best not to hinge after days and days of extreme cold temperatures. Test a few trees first. Larger diameter may not hinge as well as smaller.
 - If hinging is not working, do not continue to just fell trees without a hinge.
- Wind
- Light wind speeds are preferred when hinging. Stronger winds may only allow the tree to be felled in the direction they are blowing which may defeat the objective for directional felling and clone protection.

HINGING DIRECTIONS

- The Cut
- There is only one back cut made to create a hinge
 - The hinge should be between 4-5' above the ground
 - This creates a visual obstruction as well as a physical one
 - The cut should be angled at 30-45° above horizontal
 - The angle allows more leverage with a wedge
 - Angled back cuts typically are more successful in keeping the hinge attached than a flat back cut
 - Keep bar as level as possible to avoid twisting of the tree when it falls
 - Insert wedge as soon as possible behind bar when making cut
 - This keeps the kerf open if tree starts rocking or going backwards
 - This starts tree moving forward
 - When 2/3's through the tree, start cutting more slowly (i.e., feathering throttle, taking small portions)
 - Want to leave as much wood as possible for hinge
 - Keep working the wedge in as far as possible and taking small amounts of wood at a time
 - Monitor tree at all times and as soon as tree starts to fall on its own, stop cutting and move away
 - Hinging trees below 3" dbh is not always practical, but can be effective if there are many in an area
 - Make the back cut lower on the tree (2-4' above the ground)
 - Works better with spruce because they have more branches lower to the ground

* larger diameters can be hinged.

Citation: Kota, A.M. and D.L. Bartos. 2010. Evaluation of Techniques to Protect Aspen Suckers from Ungulate Browsing in the Black Hills. 25(4). Pp 161-168. Western Journal of Applied Forestry.

Fig. 1 Hinging ponderosa pine is a skill and an art



Fig. 2 Hinging protects emerging regeneration which increases the success of recruitment



Fig. 3 Hinged trees are cut approximately 4 – 5 feet above the soil surface



Fig. 4 Improperly cut or broken hinges are dangerous



Fig. 5 Flexible hinges are created by leaving bark and inner cambium layers



Fig. 6 Improper back cuts result in hinge failures



Fig. 7 Site assessment, layout, and directional felling are keys to successful hardwood protection



Photos by Mallett or Deisch, SDGFP









From: Deisch, Shelly

Sent: Thursday, May 13, 2021 9:15 AM

To: Conroy, Louie -FS <louie.conroy@usda.gov>; Hennings, Kristopher R -FS <kristopher.hennings@usda.gov>; Anderson, Tracy L -FS (tracy.l.anderson@usda.gov) <tracy.l.anderson@usda.gov>; Underhill, Jeffrey - FS <Jeffrey.Underhill@usda.gov>

Cc: Coughlin, Paul <Paul.Coughlin@state.sd.us>; Kanta, John <John.Kanta@state.sd.us>; Kirschenmann, Tom (Tom.Kirschenmann@state.sd.us) <Tom.Kirschenmann@state.sd.us>; Robling, Kevin (GFP) <Kevin.Robling@state.sd.us>

Subject: Pine and Aspen Restoration Project - SDGFP Comment Letter

Lou,

District Ranger Tracy Anderson is out of the office. I am reaching out to you as the Forest-wide NEPA Coordinator. I tried to call both you and Kris and had no luck connecting with either of you but left voice messages.

SDGFP has altered its Pine and Aspen Restoration Project comment letter of April 29 per our Department Secretary, Kevin Robling, direction. He is requesting that the letter of the 29th be retracted and replaced with the attached letter dated May 13, 2021.

Consider this email and attached comment letter our official submission of the Department's comments to the stated project.

Thank you for your consideration and attention to this request. Please let me know if there is something else we need to do on our end.

Shelly Deisch | *Senior Wildlife Biologist and Public Lands Liaison*

She, her

Certified Wildlife Biologist®, The Wildlife Society

South Dakota Game, Fish and Parks

4130 Adventure Trail | Rapid City, SD 57702

605.394.2391 Main Office

605.394.1756 Desk

shelly.deisch@state.sd.us

President: Central Mountains and Plains Section of TWS





SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

4130 ADVENTURE TRAIL | RAPID CITY, SD 57702

May 13, 2021

Tracy L. Anderson, Hell Canyon District Ranger
Black Hills National Forest
1019 North 5th Street
Custer, SD 57730

Deadline: May 14, 2021

Email to: <https://cara.ecosystem-management.org/Public/CommentInput?project=59737>
jeffrey.underhill@usda.gov kris.hennings@usda.gov

Subject line: Pine and Aspen Restoration Project

Dear Ranger Anderson,

The Department of Game, Fish, and Parks (SDGFP), Division of Wildlife (DOW) submits comments on the above-referenced Project (Project). The DOW has reviewed the Hell Canyon Ranger District's Scoping Notice to significantly reduce native Black Hills white spruce (*Picea glauca*) across 2,800 acres northwest of Deerfield Reservoir via Categorical Exclusion (CE) (36 CFR 220.6(e)(25)). CE 25 is a new CE for meeting restoration objectives and other watershed and habitat conditions (Federal Register Vol. 85, No. 224, Nov. 19, 2020 at 73620–73632). CE 25 has never been implemented on BHNF and this demonstration project is of first impression. Proposed activities include pine plantings and likely scarification site prep, spruce thinning, and targeted spruce timber harvesting. The project proposes to treat another 200 acres of aspen per the 2018 Black Hills Resilient Landscapes Project (BHRL). A deadline extension of May 14, 2021 is generous and offers us the ability to visit the Project area. The following comments are from a wildlife habitat perspective.

BHNF has proposed a need to *"increase the occurrence of ponderosa pine and aspen in stands that historically contained higher levels of these species but are dominated by spruce."* A secondary need, per CE 25, is to provide commercial products to support the forest products industry.

DOW has historically supported vegetation diversity across the landscape, especially the early and late successional forested plant communities. These forests support habitats for those species which rise to a level of ecological concern (Emphasis Species) because their habitats are disproportionately critical to their viability and distribution across the landscape. Emphasis Species represent the need for additional conservation measures, viability assessments, and vegetation management sideboards per FS Directives.

For early successional forests, we have extensively commented in the past on the need to treat aspen and hardwood stands for release and recruitment into mature functioning systems. In order to be recruited into functional systems, some form of protection is necessary as supported by DOW knowledge and scientific literature. We support hardwood management under certain ecological and scientifically tested conditions stated herein. While ponderosa pine is the dominant conifer in western South Dakota, DOW also recognizes the loss of mature and late successional pine structural stages (SS's) for various reasons, and supports the need for this

end of the ecological scale to be represented forest-wide (Forest Plan SS's Objectives) when it compliments or does not conflict with other ecological considerations as stated herein. Spruce is an uncommon conifer in the Black Hills, and we have historically supported management of unique mature and late successional spruce and mixed conifer communities.

Where these two ecological processes and forest seral stages (early and late) meet, there are resource conditions such as the habitats described in the CE scoping notice. Nature does not consistently and clearly divide ecological processes into neat, separate seral stage compartments across a landscape. Because of this, there are flora and fauna Emphasis Species which inhabit these mixed ecological scenarios, adding to overall landscape diversity. The unique conditions of pine, spruce, and aspen all converging within the delineated project area requires a "hard look" evaluation of how BHNH is proposing to drive the ecological systems with insufficient considerations given to these uncommon mixes of habitats.

We support removing some successional stages of spruce (such as seedlings, saplings, and immature spruce) which have "*rapidly*" (Project narrative term) expanded for various reasons outside spruce's ecological zone. Historical vegetation records reach back limited years yet are used as the reference where BHNH chooses to set its management benchmark (Historical Range of Variation - HRV) within the Phase II Amended Land and Resource Management Plan. We would like to discuss historic and recent vegetation SS inventories and review where spruce has expanded.

We appreciate the scoping notice's transparency that BHNH intends to continue to target removal of spruce of various SS's up to 30,000 acres. This demonstrates that such removals are foreseeable, connected, and cumulative effects actions. These foreseeable actions could invoke 10-12 CE 25's over time, which rises to the NEPA analysis level of a forest-wide EIS. However, a forest-wide EIS and ROD to approve spruce removal is lacking at this time. The Phase II Plan Amendment only anticipated a maximum of 5,000 acres of spruce removal within the lifetime of the Plan, not 30,000. Therefore, we request the consideration of a forest-wide EIS instead of incrementally removing spruce using CE 25.

We suggest that this Project *as proposed* incorrectly presumes that CE 25 is the appropriate authority to remove various SS's of spruce and to retype mixed conifer stands to pine; a species which dominates the forested landscape. Development of the scoping notice has missed that there are *extraordinary circumstances* and therefore, an EA or EIS is warranted. A CE Decision Memo must include a finding that no *extraordinary circumstances* exist and as proposed, this Project cannot meet that NEPA criteria. We have identified *extraordinary circumstances* and assert that *uncertain* impacts on at least one FS Region 2 Sensitive Species (R2SS), the American marten, will result due to this Project. *Uncertainty* precludes use of CE authority. We suggest that the proposed Project seeks unprecedented actions which rise to a level of more rigorous, *hard look* NEPA analysis, and treatment alternatives.

Despite our past requests to retype treated pine stands to hardwoods after a hardwood release, the response has been that database and inventory exercise are outside the scope of a project. Another example is in our 10-30-2017 BHRL DEIS comment letter and BHNH's response to such request. Yet, this Project is proposing to retype spruce to ponderosa pine as part of the Project. We seek clarification. We also recommend that removal of conifers in hardwood stands should be given the same ecological restoration and inventory considerations and be retyped to hardwoods.

We invite engagement with BHNF because there are likely opportunities to take a hardlook at other areas across the landscape which may better fit into CE 25, an EA, or an EIS at a project or forest-wide level for "restoration" by removing some SS's of spruce. As outlined herein, we provide information for BHNF's consideration. We extend an invitation for conversations with the Hell Canyon District and BHNF Forest Biologists to discuss the various Emphasis Species which will be impacted by employment of CE 25, as proposed. Thank you for the opportunity to comment.

Sincerely,



Shelly Deisch, Public Lands Liaison and Sr. Wildlife Habitat Biologist
shelly.deisch@state.sd.us Desk: 605.394.1756

CC:

Kevin Robling, Department Secretary
Tom Kirschenmann, Division Director
Paul Coughlin, Terrestrial Habitat Program Administrator
Chad Switzer, Terrestrial Wildlife Program Administrator
Trenton Haffley, Regional Terrestrial Resources Supervisor
Mike Klosowski, Regional Supervisor
John Kanta, Terrestrial Section Chief
David Mallett, Wildlife Biologist
Shannon Percy, Parks and Recreation

Addendum
Pine and Aspen Restoration Project through Removal of White Spruce

Use of CE Authority. Uncertainty to R2SS, and More Rigorous NEPA is Warranted

Forest Service Handbook (FSH) 1909.15, Chapter 30, tiered to the Code of Federal Regulations (CFR) provides guidance to the Forest Service (FS) for CE determination, such as whether “extraordinary circumstances” exist, and if the proposed action warrants further analysis and documentation in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) (36 CFR 220.6(b)). Scoping is the means to identify the presence of extraordinary circumstances that warrant a more rigorous and higher level of NEPA.

One resource condition that must be considered is the presence of Region 2 Sensitive Species (R2SS). The American marten (*Martes americana*) is a reintroduced species from extirpation and has met the criteria as a R2SS (and is a BBNF Species of Local Concern (SOLC)). Therefore, the responsible official must determine the degree of potential effects on R2SS: *“If the degree of potential effects raises uncertainty over its significance, then an extraordinary circumstance exists, precluding the use of a categorical exclusion.”*

FSH states that the “mere presence of a sensitive species” in the Project area does not preclude use of a CE but asks the FS to determine if there is a “cause-effect relationship between the proposed action and the potential effects on resource conditions”. The potential effects on resource conditions is not confined to the narrow assessment of only marten corridors. Potential “extraordinary circumstances” include the uncertainty if marten occupy habitats and use corridors in a proposed Project area and how proposed vegetation treatments may impact marten resources, distribution, movements, and risks to predation.

The Project proposal recognizes that the small delineated area provides marten corridors per the Phase II Plan Amendment and acknowledges that marten are or could be in the Project area. Objective 221 states that BBNF will conserve or enhance habitat (not just corridors) for R2SS and SOLC. BBNF has had extensive and significant landscape-scale habitat and resource condition changes since the 2003 marten habitat model (Fecske 2003) and the 2005-2006 Phase II Amendment NEPA efforts. For example, across the forest and within the Project area, both mature and late-successional pine and spruce have been significantly impacted and reduced by mountain pine beetle mortality, vegetation treatments, intense harvests, and other mortality factors such as fire and storms which are additive to natural background mortality levels. These landscape scale events have changed vegetation conditions on the forest unanticipated by the 2006 Phase II Forest Plan Amendment. Various structural stages of conifer stands were recently treated or harvested in the Oatman and Luhtasaari timber sales. Within the Project area, past group selection treatments in spruce-typed stands are stark from aerial photography.

Uncertainty in the impacts of the proposed Project lies, in part, that DOW does not have marten abundance index or population estimate since these resource condition changes. Smith (2007) tested track plate methods to estimate marten occupancy. However, BBNF nor DOW have conducted recent forest-wide population estimate nor do either agency have a recent re-analysis of forest-wide marten habitat abundance (Fecske 2003) to meet Phase II Amendment directives such as Objective 211. Fifteen years have passed since the Phase II Amendment FEIS and ROD. Forest-wide monitoring of marten habitat acreage was last published for FY 2013-2014. With an increase in spruce abundance and distribution, we cannot erroneously

presume that younger age classes and early SS's equate to quality marten habitat or corridors. Marten depend upon mature and late successional spruce and mixed conifer stands.

Black Hills 2018 Resilient Landscapes Biological Specialist's report indicated that the proposed and selected action could cause *direct* marten mortality compared to no action alternative. Further fragmentation and loss of habitat (extensive removal of mature and late-successional pine and limited spruce removal) was expected in MA 5.1. Road construction in BHRL was assessed as creating additional habitat degradation and disturbances to marten. These cause-effect actions in and adjacent to the Project area (Oatman and Luhtasaari) together with the proposed Project, leave an uncertainty to marten and its habitat components (such as corridors, logs, CWD, and prey such as small mammals). Again, BHNH is precluded from using CE Authority, and preparation of an EA or EIS is warranted (FSH 1909.15, 31.2, 36 CFR 220.6(b)(2), FSH 1909.15 Chapter 10 Section 1.6 Exhibit 01)). Scoping identifies past, present, or reasonably foreseeable future actions with the potential to create uncertainty over the significance of cumulative effects and should be commensurate with project complexity (FSH 1909.15 Chapter 30 31.1).

The cause-effect relationship of the proposed Project includes uncertainty to the impacts to R2SS including but not limited to American marten, northern flying squirrel (*Glaucomys sabrinus*) which prefer mixed conifer stands, Cooper's snail (*Oreohelix strigose cooperi*), and sensitive plants such as prairie moonwort (*Botrychium campestre*) and lesser yellow lady's-slipper (*Cypripedium parviflorum*). It is "reasonably foreseeable" that the proposed Project includes uncertain risks of marten displacement out of the Project area and adjacent preferred habitats due to this CE Project and other more recent projects. It is reasonably foreseeable that BHNH intends on conducting similar CE 25 projects throughout marten habitats which are "connected actions". Lastly, the loss of mature and late successional conifers through various mortalities listed above has resulted in "significant cumulative effects", precluding the use of CE Authority and an EA or EIS is warranted

American Marten Life Requirements and Black Hills Status

Marten have very distinct habitat requirements of mature and late successional forests. Habitat alterations in these limited seral and structural stages increase the risk of marten displacement, declines in an already limited population, or at worst, extirpation. Thus, the species indicates *ecosystem integrity* because declines in its distribution and abundance are a barometer to *ecosystem deterioration* (Fecske et al. 2002).

Fecske (2003) provides some historical context of the long-term persistence of the Project area's habitat because in the late 1800's early 1900's, a trapper was paid for marten pelts which he trapped between Deadwood and Newcastle. In 1929-1930, a local trapper trapped 17 marten in the Beaver Creek Drainages near the SD-WY border, near or including the Project area. This indicates that mature and late successional spruce and mixed conifer stands have existed in the Project area for well over a century and have existed in this region tree generation after tree generation. Between 1930 and 1979, no records exist for marten and were thought to be extirpated from the Black Hills. By 1976, DOW began planning to reintroduce the native predator and furbearer. There was an identified need to have marten, a species *integral to the ecology and integrity of dense, mature spruce and pine habitats*, return to the Black Hills. Various public groups have an interest in this native predator. Two reintroduction phases occurred in the 1980's and 1990's (SDGFP Internal Files, Fecske 2003, and B. Waite, reintroduction biologist, 2021 Pers. Comm). One reintroduction site is near the Project area (SDGFP Internal Files, Fecske 2003).

Marten have a low reproduction potential with only 1 pup/year. Past research has indicated that marten occurrence is associated with areas of high precipitation, near prior release locations, and mature aged conifer forests (Smith 2007). Marten are an indicator of late successional forest in 9 out of 13 forests in which they are found. They need deadfall, both leaning and downed, for hunting and traveling. The Project area is potentially one of the most important examples of marten habitat along Cold Creek and Castle Creek drainages. Mature and late successional spruce, pine, and mixed conifer habitats are already fragmented. Further fragmentation as proposed in this Project could *“exacerbate bottleneck effects and threaten long-term viability..... and long-term planning include protection of mature forest stands surrounding occupied areas.”* (Smith 2007). Mature and late-successional pine stands are also critical to assuring connectivity corridors are linked to mature conifer stands. Marten life requirements, available and preferred habitats, and adjoining habitats are critical to Project planning.

The most significant marten predator are great horned owls (B. Waite, 2021, Pers. Comm). Great horned owls inhabit a wide variety of habitats, but have a component of being more open. As BHNF becomes more open due to MPB, logging, fire, and other tree mortality factors, there are antidotal observations that great horned owls may be more abundant; at least their preferred open habitats are more abundant. The dense cover provided by mature and late successional conifers provides more hiding and escape cover for marten. Opening the Project area canopy cover and fragmenting connective canopies may increase mortality risks to marten.

BHNF Plan standard 3215 requires retention of at least 50% canopy cover but canopy cover can be denser. Thinning to remove overstory in dense areas to 50% is minimum and every effort should be made to retain at or above 50% of spruce, pine or mixed-conifer in SS's 3B, 3C, 4B, 4C, and 5 with at least 50% of the BA in conifer species and at least 40% of the BA in white spruce regardless of forest typed conifer stands (Buskirk 2002, BHNF Burns 2011). Corridor linkages must expand beyond the Project area to provide quality marten habitat for the Northern Hills subpopulations. Logs and CWD must also be retained (Standard 2308).

The responsible official for this proposed Project shall use the best available scientific information (BASI) (36 CFR 219.3). Use of BASI must be documented for the project analysis/assessment, the project decision, and the monitoring program. Local research should be primary to other sources. For example, while marten may not use or depend on pine or mixed spruce-pine stands elsewhere in its range, it uses and depends upon these mixed stands in the Black Hills for their life and habitat requirements (Fecske 2003). Marten are disconnected from other marten populations outside the Black Hills, and are potentially disconnected between two subpopulations. Any project which creates uncertainty in how actions may impact a limited marten subpopulation the northern hills, may jeopardize not only that northern tier, but may jeopardize the Black Hills population as a whole. There is a second subpopulation in Custer State Park and Norbeck Wildlife Preserve. The two existing subpopulations already have challenges and high risks of exchanging individuals through migration where connected corridors are lacking.

Emphasis Species

The FS Region 2 Forester identified certain species as “sensitive” and for which population viability is a concern:

- a. Significant current or predicted downward trends in population numbers or density.

b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution (FSM 2670.5)." (2005 Phase II Amendment FEIS a at III-75).

The rationale for SOLC final determination was: *"Limited population and habitat, extremely low reproductive rate, and single small population on the Forest. Extremely susceptible to disease and parasites. Need management to maintain habitat and undisturbed areas."*

Management Indicator Species within the project area include ruffed grouse and Golden crowned kinglet. Former DOW employees were interviewed recently and stated that the Project area has some of the best ruffed grouse habitat due to the mix of spruce and aspen. Historically, some of the highest occurrences of ruffed grouse existed for the western Black Hills because the grouse depended upon both early and late successional habitats year-round.

Demand Species: Spruce and mixed spruce-pine communities provide cover (hiding, screening, and winter and summer thermal) for deer and elk and their young (DePerno 1998.). Greater than 40% canopy cover is required for wild turkey (*Meleagris gallopavo merriami*) (Rumble and Anderson 1996)

FS Definition of Objective

FS defines an objective as, *"Concise statement of desired measurable results intended to promote achievement of specific goals. Attainment of objectives is limited by the application of standards and guidelines. Objectives should be expressed in terms of outcomes, not actions; and must be attainable within the fiscal capability of the unit, determined through a trend analysis of the recent past budget obligations for the unit (3 to 5 years)"* What are the expected costs of the CE NEPA, treatments, and harvest?

FS Definition of Restoration and Ecosystem Restoration

CE 25 relies on "restoration". FS definition of restoration (<https://www.fs.fed.us/restoration/>) includes *"creating and maintaining healthy, resilient forests capable of delivering all the benefits that people get from them: clean air and water, carbon sequestration, habitat for native fish and wildlife, forest products, opportunities for outdoor recreation, and more.....Monitoring and evaluation of restoration projects are essential adaptive management steps for achieving sustainable ecosystems..... Restoration activities will complement management to maintain conditions in areas with ecological integrity.....The expectation is that forest restoration treatments will lead to forest resilience and a lower probability of a catastrophic disturbance and that consequently, more carbon will continue to be sequestered than would otherwise occur without the treatment."*

"Assessing current and potential future conditions should result in a detailed description of the composition, structure, pattern, and ecological processes of the ecosystem as it moves along an ecological trajectory through time. Moving along a trajectory means that ecosystems are not static and may have changing characteristicsRestoration spans a number of initiatives in various program areas, including the invasive species strategy; recovery of areas affected by high severity fires, hurricanes, and other catastrophic disturbances; fish habitat restoration and remediation; riparian area restoration; conservation of threatened, endangered, and sensitive species."

For purposes of interagency discussions, we are unclear how established, historically typed spruce and mixed conifer stands do not provide *composition, structure, pattern, and ecological*

processes necessary to facilitate terrestrial and aquatic ecosystems sustainability, resilience, and health under current and future conditions. In 200 acres, there is proposed to be 5-acre group retention of “large” diameter pine (no dbh given) to “*promote*” (the narrative did not say “*to retain*”) late successional pine. The mere under-representation of SS5 appears that BHNF is trying to create an ecological component on 200 acres where it does not exist and may have existed at one time but for MPB and/or recent harvest treatments. We support allowing mature pine stands the time to become SS5, but that opportunity has existed across the forest for decades and more specifically since 2006 Phase II Amendment. We know of areas left untreated in one project as “future late succession” only to have another harvest entry in less than 10 years because “the mature overstory is ready for harvest.” The scoping notice negated to describe why pine stands treated in Oatman and Luhtasaari did not identify, retain, and recruit pine into SS5 or future SS5 under a *resiliency* directive (BHRL 2018). The Project area is 10,712 acres and all pine SS’s are not expected to be found on all acres, especially within small delineated project areas. Project analysis should discuss why now and why here is BHNF choosing to drive the ecological system to create SS5 where it doesn’t exist, in favor of removing or at least degrading late successional spruce and mixed conifer stands.

Based on FS restoration definitions and guidance, not having SS5 within a small Project area does not appear meet the ecological site conditions for an ecological restoration CE. Rather, the historical stands of mature and mixed conifer meet MA 5.1 desired conditions and Objective LVD 239 for a *mosaic of forest structure and diversity*. Removing mature and late successional spruce in mixed stands in a forest dominated by pine and replanting to pine will actually reduce mosaic forests. Mature and late successional stands of spruce are disproportionately important to providing overall forest ecological integrity, diversity, functioning, and *resilience* and should not be treated in this particular area.

Shepperd and Battaglia (2002) stated that the furthest western occurrence of white spruce (*Picea glauca*) is in the Black Hills. There are two or three spruce community types which disproportionately provide habitat for species not available in other forested types. Because of the limited abundance and spatial distribution of spruce community types, they are important to the BHNF’s goal of species diversity across the landscape.

The scoping notice states that the Project is for ecological restoration to be consistent with historical vegetation conditions. Ecological restoration is defined as: “*The process of assisting the recovery of an ecosystem that has been **degraded, damaged, or destroyed**. Ecological restoration focuses on reestablishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystem sustainability, resilience, and health under current and future condition.....ecological restoration may seek a historical reference condition.*” (36 CFR 219.19 and FSH 1909.12).

Upon review of the BHNF Phase II Amendment FEIS, spruce was not a common or dominant conifer species across the landscape. The EIS stated that spruce was maybe 5,000 acres over its Plan’s objective of 20,000 acres. Phase II never stated that there was an urgency to remove mature and late successional spruce and mixed conifer stands because spruce had little to no commercial value: “*Spruce timber harvests are unlikely as the wood is not as desirable as ponderosa pine.*” (2005 Phase II FEIS at III-27).

The scoping notice did not state how the Project area is *degraded, damaged, or destroyed* especially since a *resiliency* project authority (BHRL 2018) has recently and continues to treat the area. It seems illogical that a resiliency project left a project area in such a condition that it

now needs restoration. The Project notice failed to identify and explain how current conditions are not meeting ecological integrity when historically typed spruce and mixed-spruce stands are being proposed to be converted to pine, a ubiquitous species. The only criteria that the Project proposal appears to address are an historical reference from the 2006 Forest Plan Phase II Amendment of spruce acreage objective and that SS5 pine is absent from the Project area.

The Project proposed to harvest 800 acres dominated by spruce which have been historically typed as spruce and have already been treated in the past based on aerial photography. Group selection purpose is "*to regenerate uneven-aged stands in 3-5 acre patch cuts*" yet this appears to be redundant. Spruce > 7 " dbh would be removed in favor of pine and aspen inclusions. We cannot support removal of mature and late-successional spruce and mixed conifers for reasons given herein. This treatment is driving the spruce ecological system to a deteriorated state and doesn't appear to be a restoration treatment per FS definition of restoration.

1,900 acres of mixed conifer stands are proposed to be patch cuts and retyped to pine. This treatment does not meet the FS definitions of restoration and creates uncertain impacts to marten habitats and corridors. 100 acres of pine-typed stands with spruce understory and aspen inclusions will have succeeding spruce removed. Why isn't the pine also going to be removed and the stand retyped to aspen? Non-commercial spruce and pine (dbh < 9") should be hinged to protect aspen and deciduous shrub communities.

Phase II Amendment does not direct that a single project area must meet a forest-wide SS5 objective within MA 5.1. If spruce in the Project area is out of historical ecological context, we invite discussions to better understand why Project area stands have been typed and previously managed as spruce for decades. For context, BHNF has identified in its inventory and managed databases, that spruce is alleged to be 30,000 acres beyond objective. This didn't happen in a short time period. We'd like to better understand why surplus spruce was not addressed in the recent forest-wide *resiliency* project (BHRL 2018) which is expected to be viable for at least 10 years (2028). BHRL removed pine and spruce from hardwoods and if spruce is of ecological integrity and restoration concern, why wasn't it included in BHRL? We realize the BHRL questions are beyond the scope of this proposed Project, but these questions are relevant in the context of proposing to employ a "*restoration*" CE with merchantable timber as a secondary outcome in an area of high importance to BHNF Emphasis Species.

In summary, we ask BHNF to consider that this Project is looking to completely change the habitat conditions by tree species and structural stages to satisfy "*ecological integrity*" via use of a *restoration* CE. When in fact, the indicator of the Project area's ecological integrity is already present through marten and marten-preferred habitat components, and other Emphasis Species. Ecological integrity takes more than trees into consideration, as stated above. Significantly changing the current tree conditions of the project area will cause *ecosystem deterioration*, which is contrary to the "*restoration*" BHNF suggests is needed in Project area.

Proposed Hardwood Treatments

200 acres are proposed to be treated under BHRL authority. The site description says that aspen may not have regeneration present. How did BHNF assess the hardwood regeneration; was there regeneration but it was being browsed? Would it be better to state that there has not been recruitment into the clone of various aspen age classes? This demonstrates the reasons for protection of regenerating aspen. And, the site description did not indicate the condition of these residual aspen. Are they overmature inclusions and likely not to regenerate? If so, removing mature spruce to retain dying aspen inclusions does not meet the definition of

ecosystem restoration and more than likely, the aspen will die before it can regenerate enough stems/ac to create another age class or another functioning clone.

As stated in our BHRL Draft EIS comments (October 30, 2017 – see BBNF project Administrative file) incorporated by reference, and the attached hinging guideline (Mallett and Deisch 2021), non-commercial conifers should not be “*removed*” but hinged within hardwood stands to protect sapling and immature aspen from wild and domestic ungulates. Aspen research in western forests discuss that simply removing conifers from hardwoods is only one prong of aspen restoration because here in the Black Hills, aspen require protection in order to be recruited into functioning clones. Without protection, it has been shown over and over in the Black Hills, that removal of all conifers simply allows much easier access to ungulates to browse aspen. This defeats the purpose of aspen recruitment for ecological integrity. And, conifer slash should not be reduced to 18” or less. The long-term protection of more fire-resistant hardwoods far outweighs the temporary fuels loads of conifer slash. This proposed project lacks design criteria/features to actually meet the intent of forest “restoration” and needs to incorporate attached hinging and taller slash guidelines.

Site Prep and Pine Plantings

Site prep by scarification (SDGFP Comments 2017 BHRL DEIS) and replanting spruce stands to ubiquitous pine are not supported by DOW. The abundance of pine within the project area and the quick reproduction of ponderosa pine in the Black Hills (research by C. Boldt and others) preclude the need for this ground disturbing, archaic process of reforestation.

Additional Data Requested

The following inquiries should be available for public review and included in project analysis:

- Have criteria used to type stands to spruce, mixed-spruce, pine, mixed hardwood-conifer, and hardwood changed since the 2006 Phase II Amendment?
- Compare the Project area vegetation, tree species composition, and structural stage composition both before and after treatments in Oatman and Luhtasaari.
- What is the definition of a “*pure*” stand of all forest tree types in the context of percent species and structural stage composition?
- What is the structural stage composition and percentages of structural stages in Project area mixed conifer stands?
- DOW would like to discuss BBNF's mapping or other means of inventory which have estimated that in 25 years since 1997, spruce is now over 30,000 acres beyond the 1997 and 2006 Plan objective. At that rate of spread, spruce should have been at least 10,800 acres over the 20,000 acre objective by 2006 and yet, Phase II stated it was only 5,000 acres over objective. This appears to suggest that the 30,000 acres over objective are spruce in the younger age classes and should be targeted for thinning. A review of the overall structural stages of spruce and mixed spruce stands would be beneficial.

Other Considerations

The SDGFP snowmobile trails may occur within the Project area. Consultation with Shannon Percy at shannon.percy@state.sd.us 584-2731/584-3896 is required.

Literature Cited

BHNF, Burns, K. 2011. Forest Plan Implementation Clarification. Marten Habitat Connectivity Corridor Management. 3 pp.

Buskirk, S.W. 2002. Conservation Assessment for the American Marten in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mt. Region. Black Hills National Forest, Custer, SD.

DePerno, C.S. 1998. Habitat selection of a declining white-tailed deer herd in the central Black Hills, South Dakota and Wyoming. M.S. Thesis, SD State University, Brookings.

Fecske, D.M. 2003. Distribution and Abundance of American Martens and Cougars in the Black Hills of South Dakota and Wyoming. Dissertation. SD State University, Brookings.

Fecske, D.M., J.A. Jenks, and V.J. Smith. 2002. Field evaluation of a habitat-relation model for the American marten. *Wildl. Soc. Bull.* 30(3). Pp 775-782.

Rumble, M. A.; Anderson, S.H. 1996. A test of the habitat suitability model for Merriam's wild turkeys. *In*: Dickson, James G., ed. *Proceedings of the Seventh National Wild Turkey Symposium: 24-26 May, 1995*, Rapid City, South Dakota. Mechanicsburg, PA: Stackpole Books: 165-173.

Shepperd, W.D. and M.A. Battaglia. 2002. Ecology, silviculture, and management of Black Hills Ponderosa Pine. USDA Forest Service. Rocky Mt. Research Station. General Tech. Report RMRS-GTR-97.

Smith, J. 2007. Assessing American Marten use of track-plate box surveys for estimating populations size in the Black Hills of South Dakota. Thesis. SD State University, Brookings.

Waite, Blair. 2021. Marten reintroduction biologist and trapper. Pers. Comm. with Shelly Deisch, April 2021.

Hinging Conifer Species To Protect Hardwood Shoots And Saplings Tree DBH Specific to the Norbeck Wildlife Preserve Project

By David Mallett and Shelly Deisch, SDGFP Division of Wildlife
March 2021 - Techniques Paper In-Prep

PURPOSE OF HINGING

Hinging is both a mastered technical skill and art form (Fig. 1). Without some type of intervention such as fire, conifers (ponderosa pine, Black Hills spruce, and planted Douglas Fir) quickly encroach upon and dominate early-successional hardwoods such as aspen, birch, bur oak, green ash, and deciduous shrubs (referred hereafter as “hardwoods”). Releasing hardwoods from conifer dominance can stimulate the emergence of hardwood shoots and saplings. But these emerging stems also need protection from domestic and wild ungulates. The purpose of hinging is to employ a cost-effective technique to provide some protection to emerging stems by using on-site materials (standing live conifers) (Fig. 2) (Kota and Bartos 2010). Most hardwood sites in the Black Hills of South Dakota are isolated and relatively small (< 1 ac) or are found in dwindling inclusions of only 3-12 mature stems. Without protection, the hardwood release treatment is likely ineffective, may result in loss of the clone or inclusion, and may be an economic loss of valuable funds and personnel time. Where large herbivores exist, simply removing conifers is generally insufficient to ensure recruitment of new stems into the clone, stand, or shrub community. Immature regeneration needs to reach up and out of the browse level of ungulates such as livestock, deer, and elk. Protection may need to remain in place for 10 or more years.

CONCEPT OF HINGING

Hinging conifers provides a physical barrier protecting hardwood shoots from browsing by ungulates. This is accomplished by placing individual conifer canopies over hardwoods with branches, which prevents access to stems, or by windrowing conifers around hardwoods (fence), which prevents access to the stand.

A hinging sawyer must be a master of his/her/their skill because hinging can be dangerous. A conifer bole (stem) is back-cut approximately 4 feet above the soil surface (Fig 3). The sawyer must also be able to directionally fell and place conifers in the area to be protected and deter access by browsers. Felling trees is dangerous and hinging can result in a “barber chair” or unexpected snap (Fig. 4).

A back-cut into a standing, live conifer is conducted to create a flexible hinge out of the tree bark and inner cambium layers; leaving the tree bole “attached” to the residual stump at a height of 4 feet. (Fig. 5). The purpose of the tall and aerial angle of the felled and hinged tree, is to deter ungulates from entering the hardwood stand and browsing on vulnerable shoots.

A hinging sawyer is also an artist because he/she/they must be able to assess and visualize the concept of a protected hardwood stand in order to assist in successful recruitment. Protection *and* successful recruitment into a hardwood stand (or shrub) are goals to achieving functional clones and plant communities.

The sawyer must hinge and fell the conifer into existing or presumed hardwood regeneration. Improper cuts and/or the weight of the felled tree sometimes results in a failed hinge (Fig. 6). The sawyer must be able to identify emerging and existing hardwood shoots, predict where wild and domestic ungulates may enter a hardwood stand, and assess the surrounding landscape to detect the topography which may funnel ungulates into the hardwood stand to be treated. Layout and directional felling are keys to successful hardwood protection (Fig. 7). A hinged tree is not delimbed but left as-is to create a barrier to ungulates. The length of time a hinged tree is effective, depends upon site conditions and annual precipitation. However, the concept is to create as much barrier as possible with available materials. It is better to fully protect a smaller pocket of hardwood regeneration than to randomly scatter each conifer which will only, by itself, protect a few shoots for a short period. Hinging is only as effective as the sawyers' skills and the on-site conifers which will be used to create a short-term, but critical barrier to hungry ungulates. An on-site demonstration of site assessment and hinging is essential to new sawyers and is offered by SDGFP.

ESSENTIAL SITE CONSIDERATIONS

- Conifer Tree Selection and Size

- Any size live tree (conifer or hardwood) can be hinged, but the probability of hinge breakage and the danger of the tree doing something unexpected increase as the tree size increases
 - Trees 3-9" dbh* are ideal. The larger the dbh and mass of tree, the harder it falls.
- Trees that cannot be hinged should still be cut at a ground level and left whole (do *not* slash, lop or scatter).
- Trees that break-off of hinge and are light enough to lift, should be placed onto the remaining stump and left whole. Break-offs too big to lift should be left whole to make a barrier (do not slash, lop, or scatter).
- Hinged trees felled into previous hinged trees, may break the hinge of the previous tree. Leave the broken hinged tree whole and do not slash, lop, or scatter).
- Hinge small trees first and then hinge cut the larger trees that will be felled in that area.
 - A few of the smaller trees may be knocked off their hinge, but this method will make it safer and easier to move around the site.

- Tree Assessment

- Only hinge or fell live conifers.
 - Do not fell dead or obviously dying conifers (conifers impacted by hail and that only have dead needle ends are not considered dying).
 - Do not fell hardwoods or deciduous shrubs
- Is the tree leaning one direction?
 - Depending upon the severity of the lean, the tree will most likely have to be hinged in the direction it is leaning.
- Branch balance and distribution: Does one side of the tree have heavier branches or more branches than the other sides?
 - As with the lean, the direction to hinge the tree will most likely have to be to the side with the heaviest or most branches.
- With smaller diameter trees (<7"), the lean and branches will not be as important
 - These smaller trees can be manipulated more easily (e.g., pushing by hand or pole) to fall in a desired direction.
- Do not hinge or fell live conifers with a cavity. Northern flying squirrels may inhabit these trees in the winter. Some owls are cavity nesters February – spring. Bats may have winter hibernation sites.
 - GPS, map, and photograph the cavity if possible, and clearly flag the cavity tree and contact a wildlife biologist for assessment.

- Direction of Felled Hinged Tree

- This step is critical because if aerial barriers are not created in such a fashion to dissuade ungulates, hinging efficacy will be low and resultant hardwood recruitment will be minimal or clone loss may occur.
- Work in teams, especially at the start of learning how to hinge and protect an area.
- Assessment of the standing conifers is essential to a successfully hinged area
- Layout of hinged conifers should be planned before any cutting and is based on how conifers are arranged in relation to hardwoods.
- Individual conifer tree assessment is just as important to determine which way the tree should be hinged.
- Ensure everyone agrees to the layout and is out of the way of each other.
- The direction a conifer will be hinged will be dependent on which way the sawyer is comfortable taking the tree (based on assessment of lean, branches, wind, etc.) and where the existing and presumed hardwood regeneration is located.
- For the outer perimeter of hardwood stands, conifers should be hinged up to 100' from the last known hardwood stem which may be hard to find if the stem is less than 1 foot tall.
- Outer perimeter conifers should be felled to create an outer fence or windrow when possible.

- If the on-site materials are few or extremely scattered, the sawyer must assess the regeneration or where hardwoods are likely to expand and make a judgement call where hinging will provide the best, concentrated protection.
 - It is better to hinge a group of trees to form a protected pocket, than to hinge the group of trees in a scattered fashion which will not protect shoots and regeneration.
 - Hinging conifers will also remove immediate conifer seed sources. Hinge conifers even if they may not appear to be providing much advantage to the hardwood treatment site as a felled tree.
 - When possible, minimize damage to individual hardwood trees by not felling conifers into an established mature tree.
 - Hinged trees hung up in the canopy of hardwood trees is an extremely dangerous situation and will harm the live hardwood tree.
- Time of Year
- Best hinged when sap is flowing.
 - Best not to hinge after days and days of extreme cold temperatures. Test a few trees first. Larger diameter may not hinge as well as smaller.
 - If hinging is not working, do not continue to just fell trees without a hinge.
- Wind
- Light wind speeds are preferred when hinging. Stronger winds may only allow the tree to be felled in the direction they are blowing which may defeat the objective for directional felling and clone protection.

HINGING DIRECTIONS

- The Cut
- There is only one back cut made to create a hinge
 - The hinge should be between 4-5' above the ground
 - This creates a visual obstruction as well as a physical one
 - The cut should be angled at 30-45° above horizontal
 - The angle allows more leverage with a wedge
 - Angled back cuts typically are more successful in keeping the hinge attached than a flat back cut
 - Keep bar as level as possible to avoid twisting of the tree when it falls
 - Insert wedge as soon as possible behind bar when making cut
 - This keeps the kerf open if tree starts rocking or going backwards
 - This starts tree moving forward
 - When 2/3's through the tree, start cutting more slowly (i.e., feathering throttle, taking small portions)
 - Want to leave as much wood as possible for hinge
 - Keep working the wedge in as far as possible and taking small amounts of wood at a time
 - Monitor tree at all times and as soon as tree starts to fall on its own, stop cutting and move away
 - Hinging trees below 3" dbh is not always practical, but can be effective if there are many in an area
 - Make the back cut lower on the tree (2-4' above the ground)
 - Works better with spruce because they have more branches lower to the ground

* larger diameters can be hinged.

Citation: Kota, A.M. and D.L. Bartos. 2010. Evaluation of Techniques to Protect Aspen Suckers from Ungulate Browsing in the Black Hills. 25(4). Pp 161-168. Western Journal of Applied Forestry.

Fig. 1 Hinging ponderosa pine is a skill and an art



Fig. 2 Hinging protects emerging regeneration which increases the success of recruitment



Fig. 3 Hinged trees are cut approximately 4 – 5 feet above the soil surface



Fig. 4 Improperly cut or broken hinges are dangerous



Fig. 5 Flexible hinges are created by leaving bark and inner cambium layers



Fig. 6 Improper back cuts result in hinge failures



Fig. 7 Site assessment, layout, and directional felling are keys to successful hardwood protection



Photos by Mallett or Deisch, SDGFP

Date submitted (UTC-11): 5/14/2021 12:00:00 AM

First name: Shelly

Last name: Deisch

Organization: South Dakota Game, Fish and Parks

Title: Public Lands Liaison

Comments:

[Supplemental Comments from SDGFP. Text from attached letter copied here for coding purposes; refer to attachment for photos and additional context]

May 14, 2021

Tracy L. Anderson, Hell Canyon District Ranger Black Hills National Forest

1019 North 5th Street Custer, SD 57730

Deadline: May 14, 2021

Email to: <https://cara.ecosystem-management.org/Public/CommentInput?project=59737>
jeffrey.underhill@usda.gov kris.hennings@usda.gov

Subject line: Pine and Aspen Restoration Project Dear Ranger Anderson,

The Department of Game, Fish, and Parks (SDGFP), Division of Wildlife (DOW) submits supplemental comments on the above-referenced Project (Project). On May 13, I was able to spend a few hours in the proposed Project area along main arterial roads 110 and 117. Roads were in very poor conditions and nearly impassable in some areas due to deep ruts and soft road base. Impassable side roads were avoided.

I offer the following comments to engage in an aspen treatment conversation and field trip when roads are in better condition. As part of the proposed aspen treatments (within the scope of this proposed project) we offer suggestions herein. And, from a "big picture" discussion (outside the scope of this proposed project), we request an interagency brain storming session to discuss a systematic approach to evaluating aspen sites for treatment. Some type of evaluation criteria could be established to consider aspen placement on the landscape, proximity to roads and opportunities for illegal off-roading, proximity to livestock watering areas, big game impacts, stand condition, stand age classes, plant community, options for treatment, etc., etc. A numerical score and/or narrative may help prioritized which clones to treat first and how to treat with limited budgets.

SDGFP has co-funded many aspen restoration projects with BHNF and on our state lands, including Custer State Park. In the past 20 years, we have successfully received many grants from area NGO's for aspen funding. We have learned along the way, and we have made mistakes. After spending nearly 20 years working with aspen in the Black Hills, and consulting with the two primary aspen ecologists in the west; Drs. Dale Bartos and Paul Rogers, I believe that our agencies can come up with a system to assess aspen and list criteria and options for treatment or no treatment. To develop such a guide, it would be valuable to tap into the long- term employees of our agencies for their experiences of what works, what does not work to sustain and recruit aspen.

During the SDGFP-WYGF hosted Aspen Days in 2019, there was talk among the participants and presenters to come up with a hardwood assessment and treatment guide. Spending time in one of the Project area aspen stands yesterday, re-inspired this thought for a uniform set of

evaluation criteria. This could also be a bigger discussion for the forest plan revision since there are currently few directives which help guide treatment and protection options for aspen and other hardwood stands. Our agency doesn't have standard aspen evaluation and treatment protocols, either. As stated in our other letter (May 13, 2021) for this Project, simply removing conifers is not a viable, long-term solution to meet forest plan direction to increase aspen acreage and to ensure functioning clones. And, only removing conifers generally doesn't meet ecological or restoration goals when recruitment is not addressed. Too often and regardless of land ownership, regeneration is heavily browsed by wild and domestic ungulates, in addition to the other natural forces such as frost, disease, trampling, insects, small mammals, and other mortality factors. Fencing is an option but expensive and illogical in some landscapes. And, not all areas are ideal for hinging or leaving slash above 18".

As public land management employees come and go, we tend to repeat the aspen regeneration, restoration, and recruitment discussion but we have not yet formulated an aspen treatment guide. A uniform evaluation process (such as Rogers, P.C. 2017. Guide to Quaking Aspen Ecology and Management with Emphasis on BLM lands in the western United States. BLM-UT-G1017-001-8000) but specific to the Black Hills would be valuable to all public land management agencies and private landowners. Aspen in the Black Hills is not the same "critter" as elsewhere in the west and it certainly is not similar to aspen in the Lake States. Dr. Bartos has spent many hours in the Black Hills and stated that the aspen life form here is much more fragile and finicky, likely because it is on the eastern fringe of its range and faces drastic weather and climate changes within a relatively small geographical area, in addition to the decades of human impacts.

Proposed Aspen Treatment Site T02NR01ES27 (?) Road 110 N44.10725 W103.98130 Spur road 140.4F (or 110.4F?). Coarse Filter assessment and Recommendations:

- * Clone bisected by road 110 and spur road .4F
- * Fairly open landscape offers opportunities for illegal off-roading - are there considerations to close this spur road?
- * Considerations for big game screening cover from Road 110. Well established, mature spruce and pine inclusions could be retained within the periphery of the road. This would aid in meeting forest plan direction for screening cover and dissuade off-road use. Some areas have large boulders to dissuade off-road use in the fairly open landscape so there is a history of off-roading.
- * Only 2 age classes of aspen: late successional and sprouts less than 1-M tall. Many late successional aspen dead or dying. Aspen is regenerating yet nearly every stem observed has been browsed (photo). No recruitment into older age classes is occurring.
- * Can "see through" the stand due to missing age classes (photo). Dr. Bartos indicates this as a deteriorating condition for the clone.
- * Fairly open landscape offers unimpeded opportunities for cattle, elk, and deer browsing.
- * Significant droppings from all ungulates (photo).
- * Well-established, historic stock dam attracts livestock and wild ungulates. Future: look at opportunities to establish water tanks elsewhere and close this pond. Forest Plan direction is to place water tanks outside hardwoods, when possible.
- * Much of the on-site materials which could be used to hinge have already been removed. Slash was not left to protect shoots. Some material from slash pile could be re-distributed to protect aspen shoots.
- * If project is approved, considerations for hinging and leaving slash should be evaluated.
- * Mature aspen which escaped historic browsing tends to be growing inside juniper (photo). At least for some of the mature aspen stems originally escaped browsing because of the protection juniper offered (animals do not want to put their face into prickly juniper).
- * Juniper should be untreated. Opening the stand <40% overstory can dissuade juniper

and may cause juniper die-back.

* American three-toed woodpecker habitat. I observed this this R2SS foraging in the bark of very large diameter spruce. Considerations for this species includes leaving inclusions of mature and late-successional spruce along the road. Several warblers and kinglets.

* A scattering of large-diameter (>16") PIPOs remain after the last entry. Mark as a wildlife tree for retention.

* Retype the stand to aspen or mixed conifer/aspen with emphasis on aspen.

* Historic references from former GFP employees indicated these mixed stands are important to ruffed grouse, BHNH MIS.

[Photo captions]

Can "see through" the stand; missing age classes

Heavy browsing by large wild and domestic ungulates

Nearly every aspen shoot has been browsed

Juniper is an important ecological component

110 to the west, cross cattleguard.

Coarse Filter Assessment:

* SDGFP has photos from the Sander's Corral (photo) area (near this area but on 117) in the 1960's where there was an attempt to eliminate aspen; it was plowed and herbicide treated. Windrows were created and pine was planted. Aspen at that time was considered a pest species because it had no market value. An unsuccessful experiment at SDSU was conducted to force-feed livestock aspen to see if it had forage value in commercial feed. The windrows and scraggly leave-tree-marked pine look very similar to this type of treatment at Sander's Corral. The aspen is a younger age class than the clone described above, which indicates a more recent disturbance compared to the older clones. Some pine appears to be growing in rows (photo).

* Visit this area to talk about potential treatment options base on historic disturbances.

[Photo captions]

Scattered "windrows"

Pine: poor growth form and appears to have been planted.

1960's Sander's Corral Area - elimination of aspen and planting pine.

Proposed Aspen Treatment Site T02NR01ES23 (?) Road 117

This small aspen clone is along the road and is edged by open meadow on one side.

* Again, same considerations as above; easily accessible by wild and domestic ungulates.

- * Needs protection from browsing animals. Sufficient on-site material in live trees and CWD. Leave slash >18" above ground.
- * Need to walk to determine edge of clone within the mixed conifer stand and how far into the mixed stand conifers could be removed.
- * Re-type the stand to aspen.

[See photo]

Thank you for your consideration of an interagency field-trip and incorporating these suggestions if this particular proposed Project moves forward.

Sincerely,

Shelly Deisch, Public Lands Liaison and Sr. Wildlife Habitat Biologist shelly.deisch@state.sd.us Desk: 605.394.1756

CC:

Paul Coughlin, Terrestrial Habitat Program Administrator Trenton Haffley, Regional Terrestrial Resources Supervisor Mike Klosowski, Regional Supervisor

John Kanta, Terrestrial Section Chief David Mallett, Wildlife Biologist

Date submitted (UTC-11): 5/13/2021 12:00:00 AM

First name: Shelly

Last name: Deisch

Organization: South Dakota Department of Game, Fish and Parks

Title: Sr. Wildlife Biologist and FS Liaison

Comments:

[The text below was copied from the attachment for coding purposes; see the attachment for photos.]

April 29, 2021

Tracy L. Anderson, Hell Canyon District Ranger Black Hills National Forest

1019 North 5th Street Custer, SD 57730

Deadline: May 14, 2021

Email to: <https://cara.ecosystem-management.org/Public/CommentInput?project=59737>
jeffrey.underhill@usda.gov kris.hennings@usda.gov

Subject line: Pine and Aspen Restoration Project Dear Ranger Anderson,

The Department of Game, Fish, and Parks (SDGFP), Division of Wildlife (DOW) submits comments on the above-referenced Project (Project). The DOW has reviewed the Hell Canyon Ranger District's Scoping Notice to significantly reduce native Black Hills white spruce (*Picea glauca*) across 2,800 acres northwest of Deerfield Reservoir via Categorical Exclusion (CE) (36 CFR 220.6(e)(25)). CE 25 is a new CE for meeting restoration objectives and other watershed and habitat conditions (Federal Register Vol. 85, No. 224, Nov. 19, 2020 at 73620-73632). CE 25 has never been implemented on BHNH and this demonstration project is of first impression. Proposed activities include pine plantings and likely scarification site prep, spruce thinning, and targeted spruce timber harvesting. The project proposes to treat another 200 acres of aspen per the 2018 Black Hills Resilient Landscapes Project (BHRL). A deadline extension of May 14, 2021 is generous and offers us the ability to visit the Project area.

BHNH has proposed a need to "increase the occurrence of ponderosa pine and aspen in stands that historically contained higher levels of these species but are dominated by spruce." A secondary need, per CE 25, is to provide commercial products to support the forest products industry.

DOW has historically supported vegetation diversity across the landscape, especially the early and late successional forested plant communities. These forests support habitats for those species which rise to a level of ecological concern (Emphasis Species) because their habitats are disproportionately critical to their viability and distribution across the landscape. Emphasis Species represent the need for additional conservation measures, viability assessments, and vegetation management sideboards per FS Directives.

For early successional forests, we have extensively commented in the past on the need to treat aspen and hardwood stands for release and recruitment into mature functioning systems. In order to be recruited into functional systems, some form of protection is necessary as supported by DOW knowledge and scientific literature. We support hardwood management under certain ecological and scientifically tested conditions stated herein. While ponderosa pine is the dominant conifer in western South Dakota, DOW also recognizes the loss of mature and late successional pine structural stages (SS's) for various reasons, and supports the need for this end of the ecological scale to be represented forest-wide (Forest Plan SS's Objectives) when it compliments or does not conflict with other ecological considerations as stated herein. Spruce is an uncommon conifer in the Black Hills, and we have historically supported management of unique mature and late successional spruce and mixed conifer communities.

Where these two ecological processes and forest seral stages (early and late) meet, there are resource conditions such as the habitats described in the CE scoping notice. Nature does not consistently and clearly divide ecological processes into neat, separate seral stage compartments across a landscape. Because of this, there are flora and fauna Emphasis Species which inhabit these mixed ecological scenarios, adding to overall landscape diversity. The unique conditions of pine, spruce, and aspen all converging within the delineated

project area requires a "hard look" evaluation of how BHNF is proposing to drive the ecological systems with insufficient considerations given to these uncommon mixes of habitats.

We support removing some successional stages of spruce (such as seedlings, saplings, and immature spruce) which have "rapidly" (Project narrative term) expanded for various reasons outside spruce's ecological zone. Historical vegetation records reach back limited years yet are used as the reference where BHNF chooses to set its management benchmark (Historical Range of Variation - HRV) within the Phase II Amended Land and Resource Management Plan. We would like to discuss historic and recent vegetation SS inventories and review where spruce has expanded.

We appreciate the scoping notice's transparency that BHNF intends to continue to target removal of spruce of various SS's up to 30,000 acres. This demonstrates that such removals are foreseeable, connected, and cumulative effects actions. These foreseeable actions could invoke 10-12 CE 25's over time, which rises to the NEPA analysis level of a forest-wide EIS. However, a forest-wide EIS and ROD to approve spruce removal is lacking at this time. The Phase II Plan Amendment only anticipated a maximum of 5,000 acres of spruce removal within the lifetime of the Plan, not 30,000. Therefore, we request the consideration of a forest-wide EIS instead of incrementally removing spruce using CE 25.

We suggest that this Project as proposed incorrectly presumes that CE 25 is the appropriate authority to remove various SS's of spruce and to retype mixed conifer stands to pine; a species which dominates the forested landscape. Development of the scoping notice has missed that there are extraordinary circumstances and therefore, an EA or EIS is warranted. A CE Decision Memo must include a finding that no extraordinary circumstances exist and as proposed, this Project cannot meet that NEPA criteria. We have identified extraordinary circumstances and assert that uncertain impacts on at least one FS Region 2 Sensitive Species (R2SS), the American marten, will result due to this Project. Uncertainty precludes use of CE authority.

We suggest that the proposed Project seeks unprecedented actions which rise to a level of more rigorous, hard look NEPA analysis, and treatment alternatives.

Despite our past requests to retype treated pine stands to hardwoods after a hardwood release, the response has been that database and inventory exercise are outside the scope of a project. Another example is in our 10-30-2017 BHRL DEIS comment letter and BHNF's response to such request. Yet, this Project is proposing to retype spruce to ponderosa pine as part of the Project. We seek clarification. We also recommend that removal of conifers in hardwood stands should be given the same ecological restoration and inventory considerations and be retyped to hardwoods.

Unfortunately, BHNF has conflicts with forest Plan directives in this Project proposal and DOW cannot support it at this time. The Project reaches well beyond the site-specific project level.

However, we invite engagement with BHNF because there are likely opportunities to take a hard look at other areas across the landscape which may better fit into CE 25, an EA, or an EIS at a project or forest-wide level for "restoration" by removing some SS's of spruce. As outlined herein, we provide information for BHNF's consideration. We extend an invitation for conversations with the Hell Canyon District and BHNF Forest Biologists to discuss the various Emphasis Species which will be impacted by employment of CE 25, as proposed. Thank you for the opportunity to comment.

Sincerely,

Shelly Deisch, Public Lands Liaison and Sr. Wildlife Habitat Biologist shelly.deisch@state.sd.us Desk:
605.394.1756

CC:

Kevin Robling, Department Secretary Tom Kirschenmann, Division Director

Paul Coughlin, Terrestrial Habitat Program Administrator Chad Switzer, Terrestrial Wildlife Program
Administrator Trenton Haffley, Regional Terrestrial Resources Supervisor Mike Klosowski, Regional Supervisor

John Kanta, Terrestrial Section Chief David Mallett, Wildlife Biologist Shannon Percy, Parks and Recreation

Addendum

Pine and Aspen Restoration Project through Removal of White Spruce

Use of CE Authority, Uncertainty to R2SS, and More Rigorous NEPA is Warranted
Forest Service Handbook (FSH) 1909.15, Chapter 30, tiered to the Code of Federal Regulations (CFR) provides guidance to the Forest Service (FS) for CE determination, such as whether "extraordinary circumstances" exist, and if the proposed action warrants further analysis and documentation in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) (36 CFR 220.6(b)). Scoping is the means to identify the presence of extraordinary circumstances that warrant a more rigorous and higher level of NEPA.

One resource condition that must be considered is the presence of Region 2 Sensitive Species (R2SS). The American marten (*Martes americana*) is a reintroduced species from extirpation and has met the criteria as a R2SS (and is a BHNF Species of Local Concern (SOLC)).

Therefore, the responsible official must determine the degree of potential effects on R2SS: "If the degree of potential effects raises uncertainty over its significance, then an extraordinary circumstance exists, precluding the use of a categorical exclusion."

FSH states that the "mere presence of a sensitive species" in the Project area does not preclude use of a CE but asks the FS to determine if there is a "cause-effect relationship between the proposed action and the potential effects on resource conditions". The potential effects on resource conditions is not confined to the narrow assessment of only marten corridors. Potential "extraordinary circumstances" include the uncertainty if marten occupy habitats and use corridors in a proposed Project area and how proposed vegetation treatments may impact marten resources, distribution, movements, and risks to predation.

The Project proposal recognizes that the small delineated area provides marten corridors per the Phase II Plan Amendment and acknowledges that marten are or could be in the Project area. Objective 221 states that BHNF will conserve or enhance habitat (not just corridors) for R2SS and SOCL. BHNF has had extensive and significant landscape-scale habitat and resource condition changes since the 2003 marten habitat model (Fecske 2003) and the 2005- 2006 Phase II Amendment NEPA efforts. For example, across the forest and within the Project area, both mature and late-successional pine and spruce have been significantly impacted and reduced by mountain pine beetle mortality, vegetation treatments, intense harvests, and other mortality factors such as fire and storms which are additive to natural background mortality levels. These landscape scale events have changed vegetation conditions on the forest unanticipated by the 2006 Phase II Forest Plan Amendment. Various structural stages of conifer stands were recently treated or harvested in the Oatman and Luhtasaari timber sales. Within the Project area, past group selection treatments in spruce-typed stands are stark from aerial photography.

Uncertainty in the impacts of the proposed Project lies, in part, that DOW does not have marten abundance index or population estimate since these resource condition changes. Smith (2007) tested track plate methods to estimate marten occupancy. However, BHNF nor DOW have conducted recent forest-wide population estimate nor do either agency have a recent re- analysis of forest-wide marten habitat abundance (Fecske 2003) to meet Phase II Amendment directives such as Objective 211. Fifteen years have passed since the Phase II Amendment FEIS and ROD. Forest-wide monitoring of marten habitat acreage was last published for FY 2013-2014. With an increase in spruce abundance and distribution, we cannot erroneously presume that younger age classes and early SS's equate to quality marten habitat or corridors. Marten depend upon mature and late successional spruce and mixed conifer stands.

Black Hills 2018 Resilient Landscapes Biological Specialist's report indicated that the proposed and selected action could cause direct marten mortality compared to no action alternative.

Further fragmentation and loss of habitat (extensive removal of mature and late-successional pine and limited spruce removal) was expected in MA 5.1. Road construction in BHRL was assessed as creating additional habitat degradation and disturbances to marten. These cause-effect actions in and adjacent to the Project area (Oatman and Luhtasaari) together with the proposed Project, leave an uncertainty to marten and its habitat components (such as corridors, logs, CWD, and prey such as small mammals). Again, BHNH is precluded from using CE Authority, and preparation of an EA or EIS is warranted (FSH 1909.15, 31.2, 36 CFR 220.6(b)(2), FSH 1909.15 Chapter 10 Section 1.6 Exhibit 01)). Scoping identifies past, present, or reasonably foreseeable future actions with the potential to create uncertainty over the significance of cumulative effects and should be commensurate with project complexity (FSH 1909.15 Chapter 30 31.1).

The cause-effect relationship of the proposed Project includes uncertainty to the impacts to R2SS including but not limited to American marten, northern flying squirrel (*Glaucomys sabrinus*) which prefer mixed conifer stands, Cooper's snail (*Oreohelix strigose cooperi*), and sensitive plants such as prairie moonwort (*Botrychium campestre*) and lesser yellow lady's-slipper (*Cypripedium parviflorum*). It is "reasonably foreseeable" that the proposed Project includes uncertain risks of marten displacement out of the Project area and adjacent preferred habitats due to this CE Project and other more recent projects. It is reasonably foreseeable that BHNH intends on conducting similar CE 25 projects throughout marten habitats which are "connected actions". Lastly, the loss of mature and late successional conifers through various mortalities listed above has resulted in "significant cumulative effects", precluding the use of CE Authority and an EA or EIS is warranted.

American Marten Life Requirements and Black Hills Status

Marten have very distinct habitat requirements of mature and late successional forests. Habitat alterations in these limited seral and structural stages increase the risk of marten displacement, declines in an already limited population, or at worst, extirpation. Thus, the species indicates ecosystem integrity because declines in its distribution and abundance are a barometer to ecosystem deterioration (Fecske et al. 2002).

Fecske (2003) provides some historical context of the long-term persistence of the Project area's habitat because in the late 1800's early 1900's, a trapper was paid for marten pelts which he trapped between Deadwood and Newcastle. In 1929-1930, a local trapper trapped 17 marten in the Beaver Creek Drainages near the SD-WY border, near or including the Project area. This indicates that mature and late successional spruce and mixed conifer stands have existed in the Project area for well over a century and have existed in this region tree generation after tree generation. Between 1930 and 1979, no records exist for marten and were thought to be extirpated from the Black Hills. By 1976, DOW began planning to reintroduce the native predator and furbearer. There was an identified need to have marten, a species integral to the ecology and integrity of dense, mature spruce and pine habitats, return to the Black Hills.

Various public groups have an interest in this native predator. Two reintroduction phases occurred in the 1980's and 1990's (SDGFP Internal Files, Fecske 2003, and B. Waite, reintroduction biologist, 2021 Pers. Comm). One reintroduction site is near the Project area (SDGFP Internal Files, Fecske 2003).

Marten have a low reproduction potential with only 1 pup/year. Past research has indicated that marten occurrence is associated with areas of high precipitation, near prior release locations, and mature aged conifer forests (Smith 2007). Marten are an indicator of late successional forest in 9 out of 13 forests in which they are found. They need deadfall, both leaning and downed, for hunting and traveling. The Project area is potentially one of the most important examples of marten habitat along Cold Creek and Castle Creek drainages. Mature and late successional spruce, pine, and mixed conifer habitats are already fragmented. Further fragmentation as proposed in this Project could "exacerbate bottleneck effects and threaten long-term viability[hellip].. and long-term planning include protection of mature forest stands surrounding occupied areas." (Smith 2007). Mature and late-successional pine stands are also critical to assuring connectivity corridors are linked to mature conifer stands. Marten life requirements, available and preferred habitats, and adjoining habitats are critical to Project planning.

The most significant marten predator are great horned owls (B. Waite, 2021, Pers. Comm). Great horned owls inhabit a wide variety of habitats, but have a component of being more open. As BHNH becomes more open

due to MPB, logging, fire, and other tree mortality factors, there are antidotal observations that great horned owls may be more abundant; at least their preferred open habitats are more abundant. The dense cover provided by mature and late successional conifers provides more hiding and escape cover for marten. Opening the Project area canopy cover and fragmenting connective canopies may increase mortality risks to marten.

BHNF Plan standard 3215 requires retention of at least 50% canopy cover but canopy cover can be denser. Thinning to remove overstory in dense areas to 50% is minimum and every effort should be made to retain at or above 50% of spruce, pine or mixed-conifer in SS's 3B, 3C, 4B, 4C, and 5 with at least 50% of the BA in conifer species and at least 40% of the BA in white spruce regardless of forest typed conifer stands (Buskirk 2002, BHNF Burns 2011). Corridor linkages must expand beyond the Project area to provide quality marten habitat for the Northern Hills subpopulations. Logs and CWD must also be retained (Standard 2308).

The responsible official for this proposed Project shall use the best available scientific information (BASI) (36 CFR 219.3). Use of BASI must be documented for the project analysis/assessment, the project decision, and the monitoring program. Local research should be primary to other sources. For example, while marten may not use or depend on pine or mixed spruce-pine stands elsewhere in its range, it uses and depends upon these mixed stands in the Black Hills for their life and habitat requirements (Fecske 2003). Marten are disconnected from other marten populations outside the Black Hills, and are potentially disconnected between two subpopulations. Any project which creates uncertainty in how actions may impact a limited marten subpopulation the northern hills, may jeopardize not only that northern tier, but may jeopardize the Black Hills population as a whole. There is a second subpopulation in Custer State Park and Norbeck Wildlife Preserve. The two existing subpopulations already have challenges and high risks of exchanging individuals through migration where connected corridors are lacking.

Emphasis Species

The FS Region 2 Forester identified certain species as "sensitive" and for which population viability is a concern:

1. Significant current or predicted downward trends in population numbers or density.

1. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution (FSM 2670.5)." (2005 Phase II Amendment FEIS a at III-75).

The rationale for SOLC final determination was: "Limited population and habitat, extremely low reproductive rate, and single small population on the Forest. Extremely susceptible to disease and parasites. Need management to maintain habitat and undisturbed areas."

Management Indicator Species within the project area include ruffed grouse and Golden crowned kinglet. Former DOW employees were interviewed recently and stated that the Project area has some of the best ruffed grouse habitat due to the mix of spruce and aspen.

Historically, some of the highest occurrences of ruffed grouse existed for the western Black Hills because the grouse depended upon both early and late successional habitats year-round.

Demand Species: Spruce and mixed spruce-pine communities provide cover (hiding, screening, and winter and summer thermal) for deer and elk and their young (DePerno 1998.). Greater than 40% canopy cover is required for wild turkey (*Meleagris gallopavo merriami*) (Rumble and Anderson 1995)

FS Definition of Objective

FS defines an objective as, "Concise statement of desired measurable results intended to promote achievement of specific goals. Attainment of objectives is limited by the application of standards and guidelines. Objectives should be expressed in terms of outcomes, not actions; and must be attainable within the fiscal capability of the unit, determined through a trend analysis of the recent past budget obligations for the unit (3 to 5 years)" What are the expected costs of the CE NEPA, treatments, and harvest?

FS Definition of Restoration and Ecosystem Restoration

CE 25 relies on "restoration". FS definition of restoration (<https://www.fs.fed.us/restoration/>) includes "creating and maintaining healthy, resilient forests capable of delivering all the benefits that people get from them: clean air and water, carbon sequestration, habitat for native fish and wildlife, forest products, opportunities for outdoor recreation, and more[hellip][hellip]Monitoring and evaluation of restoration projects are essential adaptive

management steps for achieving sustainable ecosystems[hellip].. Restoration activities will complement management to maintain conditions in areas with ecological integrity[hellip]..The expectation is that forest restoration treatments will lead to forest resilience and a lower probability of a catastrophic disturbance and that consequently, more carbon will continue to be sequestered than would otherwise occur without the treatment."

"Assessing current and potential future conditions should result in a detailed description of the composition, structure, pattern, and ecological processes of the ecosystem as it moves along an ecological trajectory through time. Moving along a trajectory means that ecosystems are not static and may have changing characteristics [hellip].Restoration spans a number of initiatives in various program areas, including the invasive species strategy; recovery of areas affected by high severity fires, hurricanes, and other catastrophic disturbances; fish habitat restoration and remediation; riparian area restoration; conservation of threatened, endangered, and sensitive species."

For purposes of interagency discussions, we are unclear how established, historically typed spruce and mixed conifer stands do not provide composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystems sustainability, resilience, and health under current and future conditions. In 200 acres, there is proposed to be 5-acre group retention of "large" diameter pine (no dbh given) to "promote" (the narrative did not say "to retain") late successional pine. The mere under-representation of SS5 appears that BHNF is trying to create an ecological component on 200 acres where it does not exist and may have existed at one time but for MPB and/or recent harvest treatments. We support allowing mature pine stands the time to become SS5, but that opportunity has existed across the forest for decades and more specifically since 2006 Phase II Amendment. We know of areas left untreated in one project as "future late succession" only to have another harvest entry in less than 10 years because "the mature overstory is ready for harvest." The scoping notice negated to describe why pine stands treated in Oatman and Luhtasaari did not identify, retain, and recruit pine into SS5 or future SS5 under a resiliency directive (BHRL 2018). The Project area is 10,712 acres and all pine SS's are not expected to be found on all acres, especially within small delineated project areas. Project analysis should discuss why now and why here is BHNF choosing to drive the ecological system to create SS5 where it doesn't exist, in favor of removing or at least degrading late successional spruce and mixed conifer stands.

Based on FS restoration definitions and guidance, not having SS5 within a small Project area does not appear meet the ecological site conditions for an ecological restoration CE. Rather, the historical stands of mature and mixed conifer meet MA 5.1 desired conditions and Objective LVD 239 for a mosaic of forest structure and diversity. Removing mature and late successional spruce in mixed stands in a forest dominated by pine and replanting to pine will actually reduce mosaic forests. Mature and late successional stands of spruce are disproportionately important to providing overall forest ecological integrity, diversity, functioning, and resilience and should not be treated in this particular area.

Shepperd and Battaglia (2002) stated that the furthest western occurrence of white spruce (*Picea glauca*) is in the Black Hills. There are two or three spruce community types which disproportionately provide habitat for species not available in other forested types. Because of the limited abundance and spatial distribution of spruce community types, they are important to the BHNF's goal of species diversity across the landscape.

The scoping notice states that the Project is for ecological restoration to be consistent with historical vegetation conditions. Ecological restoration is defined as: "The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. Ecological restoration focuses on reestablishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystem sustainability, resilience, and health under current and future condition[hellip]..ecological restoration may seek a historical reference condition." (36 CFR 219.19 and FSH 1909.12) .

Upon review of the BHNF Phase II Amendment FEIS, spruce was not a common or dominant conifer species across the landscape. The EIS stated that spruce was maybe 5,000 acres over its Plan's objective of 20,000 acres. Phase II never stated that there was an urgency to remove mature and late successional spruce and mixed conifer stands because spruce had little to no commercial value: "Spruce timber harvests are unlikely as the wood is not as desirable as ponderosa pine." (2005 Phase II FEIS at III-27).

The scoping notice did not state how the Pproject area is degraded, damaged, or destroyed especially since a resiliency project authority (BHRL 2018) has recently and continues to treat the area. It seems illogical that a resiliency project left a project area in such a condition that it now needs restoration. The Project notice failed to

identify and explain how current conditions are not meeting ecological integrity when historically typed spruce and mixed-spruce stands are being proposed to be converted to pine, a ubiquitous species. The only criteria that the Project proposal appears to address are an historical reference from the 2006 Forest Plan Phase II Amendment of spruce acreage objective and that SS5 pine is absent from the Project area.

The Project proposed to harvest 800 acres dominated by spruce which have been historically typed as spruce and have already been treated in the past based on aerial photography. Group selection purpose is "to regenerate uneven-aged stands in 3-5 acre patch cuts" yet this appears to be redundant. Spruce > 7" dbh would be removed in favor of pine and aspen inclusions. We cannot support removal of mature and late-successional spruce and mixed conifers for reasons given herein. This treatment is driving the spruce ecological system to a deteriorated state and doesn't appear to be a restoration treatment per FS definition of restoration.

1,900 acres of mixed conifer stands are proposed to be patch cuts and retyped to pine. This treatment does not meet the FS definitions of restoration and creates uncertain impacts to marten habitats and corridors. 100 acres of pine-typed stands with spruce understory and aspen inclusions will have succeeding spruce removed. Why isn't the pine also going to be removed and the stand retyped to aspen? Non-commercial spruce and pine (dbh < 9") should be hinged to protect aspen and deciduous shrub communities.

Phase II Amendment does not direct that a single project area must meet a forest-wide SS5 objective within MA 5.1. If spruce in the Project area is out of historical ecological context, we invite discussions to better understand why Project area stands have been typed and previously managed as spruce for decades. For context, BHNH has identified in its inventory and managed databases, that spruce is alleged to be 30,000 acres beyond objective. This didn't happen in a short time period. We'd like to better understand why surplus spruce was not addressed in the recent forest-wide resiliency project (BHRL 2018) which is expected to be viable for at least 10 years (2028). BHRL removed pine and spruce from hardwoods and if spruce is of ecological integrity and restoration concern, why wasn't it included in BHRL? We realize the BHRL questions are beyond the scope of this proposed Project, but these questions are relevant in the context of proposing to employ a "restoration" CE with merchantable timber as a secondary outcome in an area of high importance to BHNH Emphasis Species.

In summary, we ask BHNH to consider that this Project is looking to completely change the habitat conditions by tree species and structural stages to satisfy "ecological integrity" via use of a restoration CE. When in fact, the indicator of the Project area's ecological integrity is already present through marten and marten-preferred habitat components, and other Emphasis Species. Ecological integrity takes more than trees into consideration, as stated above.

Significantly changing the current tree conditions of the project area will cause ecosystem deterioration, which is contrary to the "restoration" BHNH suggests is needed in Project area.

Proposed Hardwood Treatments

200 acres are proposed to be treated under BHRL authority. The site description says that aspen may not have regeneration present. How did BHNH assess the hardwood regeneration; was there regeneration but it was being browsed? Would it be better to state that there has not been recruitment into the clone of various aspen age classes? This demonstrates the reasons for protection of regenerating aspen. And, the site description did not indicate the condition of these residual aspen. Are they overmature inclusions and likely not to regenerate? If so, removing mature spruce to retain dying aspen inclusions does not meet the definition of ecosystem restoration and more than likely, the aspen will die before it can regenerate enough stems/ac to create another age class or another functioning clone.

As stated in our BHRL Draft EIS comments (October 30, 2017 - see BHNH project Administrative file) incorporated by reference, and the attached hinging guideline (Mallett and Deisch 2021), non-commercial conifers should not be "removed" but hinged within hardwood stands to protect sapling and immature aspen from wild and domestic ungulates. Aspen research in western forests discuss that simply removing conifers from hardwoods is only one prong of aspen restoration because here in the Black Hills, aspen require protection in order to be recruited into functioning clones. Without protection, it has been shown over and over in the Black Hills, that removal of all conifers simply allows much easier access to ungulates to browse aspen. This defeats the purpose of aspen recruitment for ecological integrity. And, conifer slash should not be reduced to 18" or less. The long-term protection of more fire-resistant hardwoods far outweighs the temporary fuels

loads of conifer slash. This proposed project lacks design criteria/features to actually meet the intent of forest "restoration" and needs to incorporate attached hinging and taller slash guidelines.

Site Prep and Pine Plantings

Site prep by scarification (SDGFP Comments 2017 BHRL DEIS) and replanting spruce stands to ubiquitous pine are not supported by DOW. The abundance of pine within the project area and the quick reproduction of ponderosa pine in the Black Hills (research by C. Boldt and others) preclude the need for this ground disturbing, archaic process of reforestation.

Additional Data Requested

The following inquiries should be available for public review and included in project analysis:

- * Have criteria used to type stands to spruce, mixed-spruce, pine, mixed hardwood- conifer, and hardwood changed since the 2006 Phase II Amendment?
- * Compare the Project area vegetation, tree species composition, and structural stage composition both before and after treatments in Oatman and Luhtasaari.
- * What is the definition of a "pure" stand of all forest tree types in the context of percent species and structural stage composition?
- * What is the structural stage composition and percentages of structural stages in Project area mixed conifer stands?
- * DOW would like to discuss BHNF's mapping or other means of inventory which have estimated that in 25 years since 1997, spruce is now over 30,000 acres beyond the 1997 and 2006 Plan objective. At that rate of spread, spruce should have been at least 10,800 acres over the 20,000 acre objective by 2006 and yet, Phase II stated it was only 5,000 acres over objective. This appears to suggest that the 30,000 acres over objective are spruce in the younger age classes and should be targeted for thinning. A review of the overall structural stages of spruce and mixed spruce stands would be beneficial.

Other Considerations

The SDGFP snowmobile trails may occur within the Project area. Consultation with Shannon Percy at shannon.percy@state.sd.us 584-2731/584-3896 is required.

Literature Cited

BHNF, Burns, K. 2011. Forest Plan Implementation Clarification. Marten Habitat Connectivity Corridor Management. 3 pp.

Buskirk, S.W. 2002. Conservation Assessment for the American Marten in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mt. Region. Black Hills National Forest, Custer, SD.

DePerno 1998

Fecske, D.M. 2003. Distribution and Abundance of American Martens and Cougars in the Black Hills of South Dakota and Wyoming. Dissertation. SD State University, Brookings.

Fecske, D.M., J.A. Jenks, and V.J. Smith. 2002. Field evaluation of a habitat-relation model for the American marten. Wildl. Soc. Bull. 30(3). Pp 775-782.

Rumble and Anderson 1995

Shepperd, W.D. and M.A. Battaglia. 2002. Ecology, silviculture, and management of Black Hills Ponderosa Pine. USDA Forest Service. Rocky Mt. Research Station. General Tech. Report RMRS-GTR-97.

Smith, J. 2007. Assessing American Marten use of track-plate box surveys for estimating populations size in the Black Hills of South Dakota. Thesis. SD State University, Brookings.

Waite, Blair. 2021. Marten reintroduction biologist and trapper. Pers. Comm. with Shelly Deisch, April 2021.

Hinging Conifer Species To Protect Hardwood Shoots And Saplings

Tree DBH Specific to the Norbeck Wildlife Preserve Project

By David Mallett and Shelly Deisch, SDGFP Division of Wildlife March 2021 - Techniques Paper In-Prep

PURPOSE OF HINGING

Hinging is both a mastered technical skill and art form (Fig. 1). Without some type of intervention such as fire, conifers (ponderosa pine, Black Hills spruce, and planted Douglas Fir) quickly encroach upon and dominate early-successional hardwoods such as aspen, birch, bur oak, green ash, and deciduous shrubs (referred hereafter as "hardwoods"). Releasing hardwoods from conifer dominance can stimulate the emergence of hardwood shoots and saplings. But these emerging stems also need protection from domestic and wild ungulates. The purpose of hinging is to employ a cost-effective technique to provide some protection to emerging stems by using on-site materials (standing live conifers) (Fig. 2) (Kota and Bartos 2010). Most hardwood sites in the Black Hills of South Dakota are isolated and relatively small (< 1 ac) or are found in dwindling inclusions of only 3-12 mature stems. Without protection, the hardwood release treatment is likely ineffective, may result in loss of the clone or inclusion, and may be an economic loss of valuable funds and personnel time. Where large herbivores exist, simply removing conifers is generally insufficient to ensure recruitment of new stems into the clone, stand, or shrub community. Immature regeneration needs to reach up and out of the browse level of ungulates such as livestock, deer, and elk. Protection may need to remain in place for 10 or more years.

CONCEPT OF HINGING

Hinging conifers provides a physical barrier protecting hardwood shoots from browsing by ungulates. This is accomplished by placing individual conifer canopies over hardwoods with branches, which prevents access to stems, or by windrowing conifers around hardwoods (fence), which prevents access to the stand.

A hinging sawyer must be a master of his/her/their skill because hinging can be dangerous. A conifer bole (stem) is back-cut approximately 4 feet above the soil surface (Fig 3). The sawyer must also be able to directionally fell and place conifers in the area to be protected and deter access by browsers. Felling trees is dangerous and hinging can result in a "barber chair" or unexpected snap (Fig. 4).

A back-cut into a standing, live conifer is conducted to create a flexible hinge out of the tree bark and inner cambium layers; leaving the tree bole "attached" to the residual stump at a height of 4 feet. (Fig. 5). The purpose of the tall and aerial angle of the felled and hinged tree, is to deter ungulates from entering the hardwood stand and browsing on vulnerable shoots.

A hinging sawyer is also an artist because he/she/they must be able to assess and visualize the concept of a protected hardwood stand in order to assist in successful recruitment. Protection and successful recruitment into a hardwood stand (or shrub) are goals to achieving functional clones and plant communities.

The sawyer must hinge and fell the conifer into existing or presumed hardwood regeneration. Improper cuts and/or the weight of the felled tree sometimes results in a failed hinge (Fig. 6). The sawyer must be able to identify emerging and existing hardwood shoots, predict where wild and domestic ungulates may enter a hardwood stand, and assess the surrounding landscape to detect the topography which may funnel ungulates into the hardwood stand to be treated. Layout and directional felling are keys to successful hardwood protection (Fig. 7). A hinged tree is not delimbed but left as-is to create a barrier to ungulates. The length of time a hinged tree is effective, depends upon site conditions and annual precipitation. However, the concept is to create as much barrier as possible with available materials. It is better to fully protect a smaller pocket of hardwood regeneration than to randomly scatter each conifer which will only, by itself, protect a few shoots for a short period. Hinging is only as effective as the sawyers' skills and the on-site conifers which will be used to create a short-term, but critical barrier to hungry ungulates. An on-site demonstration of site assessment and hinging is essential to new sawyers and is offered by SDGFP.

ESSENTIAL SITE CONSIDERATIONS

* Conifer Tree Selection and Size

- * Any size live tree (conifer or hardwood) can be hinged, but the probability of hinge breakage and the danger of the tree doing something unexpected increase as the tree size increases

- * Trees 3-9" dbh* are ideal. The larger the dbh and mass of tree, the harder it falls.

- * Trees that cannot be hinged should still be cut at a ground level and left whole (do not slash, lop or scatter).

- * Trees that break-off of hinge and are light enough to lift, should be placed onto the remaining stump and left whole. Break-offs too big to lift should be left whole to make a barrier (do not slash, lop, or scatter).

- * Hinged trees felled into previous hinged trees, may break the hinge of the previous tree. Leave the broken hinged tree whole and do not slash, lop, or scatter).

- * Hinge small trees first and then hinge cut the larger trees that will be felled in that area.

- * A few of the smaller trees may be knocked off their hinge, but this method will make it safer and easier to move around the site.

* Tree Assessment

- * Only hinge or fell live conifers.

- * Do not fell dead or obviously dying conifers (conifers impacted by hail and that only have dead needle ends are not considered dying).

- * Do not fell hardwoods or deciduous shrubs

- * Is the tree leaning one direction?

- * Depending upon the severity of the lean, the tree will most likely have to be hinged in the direction it is leaning.
- * Branch balance and distribution: Does one side of the tree have heavier branches or more branches than the other sides?
- * As with the lean, the direction to hinge the tree will most likely have to be to the side with the heaviest or most branches.
- * With smaller diameter trees (<7"), the lean and branches will not be as important
- * These smaller trees can be manipulated more easily (e.g., pushing by hand or pole) to fall in a desired direction.
- * Do not hinge or fell live conifers with a cavity. Northern flying squirrels may inhabit these trees in the winter. Some owls are cavity nesters February - spring. Bats may have winter hibernation sites.
- * GPS, map, and photograph the cavity if possible, and clearly flag the cavity tree and contact a wildlife biologist for assessment.

* Direction of Felled Hinged Tree

- * This step is critical because if aerial barriers are not created in such a fashion to dissuade ungulates, hinging efficacy will be low and resultant hardwood recruitment will be minimal or clone loss may occur.
- * Work in teams, especially at the start of learning how to hinge and protect an area.
- * Assessment of the standing conifers is essential to a successfully hinged area
- * Layout of hinged conifers should be planned before any cutting and is based on how conifers are arranged in relation to hardwoods.
- * Individual conifer tree assessment is just as important to determine which way the tree should be hinged.
- * Ensure everyone agrees to the layout and is out of the way of each other.
- * The direction a conifer will be hinged will be dependent on which way the sawyer is comfortable taking the tree (based on assessment of lean, branches, wind, etc.) and where the existing and presumed hardwood regeneration is located.
- * For the outer perimeter of hardwood stands, conifers should be hinged up to 100' from the last known hardwood stem which may be hard to find if the stem is less than 1 foot tall.
- * Outer perimeter conifers should be felled to create an outer fence or windrow when possible.

*

- * If the on-site materials are few or extremely scattered, the sawyer must assess the regeneration or where hardwoods are likely to expand and make a judgement call where hinging will provide the best, concentrated protection.

o It is better to hinge a group of trees to form a protected pocket, than to hinge the group of trees in a scattered fashion which will not protect shoots and regeneration.

*

- * Hinging conifers will also remove immediate conifer seed sources. Hinge conifers even if they may not appear to be providing much advantage to the hardwood treatment site as a felled tree.
- * When possible, minimize damage to individual hardwood trees by not felling conifers into an established mature tree.
- * Hinged trees hung up in the canopy of hardwood trees is an extremely dangerous situation and will harm the live hardwood tree.

* Time of Year

- * Best hinged when sap is flowing.
- * Best not to hinge after days and days of extreme cold temperatures. Test a few trees first. Larger diameter may not hinge as well as smaller.
- * If hinging is not working, do not continue to just fell trees without a hinge.

* Wind

- * Light wind speeds are preferred when hinging. Stronger winds may only allow the tree to be felled in the direction they are blowing which may defeat the objective for directional felling and clone protection.

HINGING DIRECTIONS

* The Cut

- * There is only one back cut made to create a hinge
- * The hinge should be between 4-5' above the ground
- * This creates a visual obstruction as well as a physical one
- * The cut should be angled at 30-45[deg] above horizontal
- * The angle allows more leverage with a wedge
- * Angled back cuts typically are more successful in keeping the hinge attached than a flat back cut
- * Keep bar as level as possible to avoid twisting of the tree when it falls
- * Insert wedge as soon as possible behind bar when making cut
- * This keeps the kerf open if tree starts rocking or going backwards
- * This starts tree moving forward
- * When 2/3's through the tree, start cutting more slowly (i.e., feathering throttle, taking small portions)
- * Want to leave as much wood as possible for hinge
- * Keep working the wedge in as far as possible and taking small amounts of wood at a time
- * Monitor tree at all times and as soon as tree starts to fall on its own, stop cutting and move away
- * Hinging trees below 3" dbh is not always practical, but can be effective if there are many in an area
- * Make the back cut lower on the tree (2-4' above the ground)
- * Works better with spruce because they have more branches lower to the ground

- * larger diameters can be hinged.

Citation: Kota, A.M. and D.L. Bartos. 2010. Evaluation of Techniques to Protect Aspen Suckers from Ungulate Browsing in the Black Hills. 25(4). Pp 161-168. Western Journal of Applied Forestry.

TEST

(05/13/2021 note: see project record for the original letter (retracted by SDGFP), revised letter (also attached), and associated comments. The above letter text is from the original letter and was not updated for coding purposes as substantive changes between the original and final letter were very minimal. However, the project record including the scoping comment report and response to comments are based on SDGFP's revised letter and associated comments.)

(05/13/2021 note: see project record for the original letter (retracted by SDGFP), revised letter (also attached), and associated comments. The above letter text is from the original letter and was not updated for coding purposes as substantive changes between the original and final letter were very minimal. However, the project record including the scoping comment report and response to comments are based on SDGFP's revised letter and associated comments.)

Date submitted (UTC-11): 4/5/2021 7:13:12 AM

First name: Edward

Last name: fischer

Organization:

Title:

Comments:

Thank you for notice of this proposal, which I received in the mail, and the opportunity to comment. My only question is regarding the statement in the scoping document that an additional 200 acres of aspen treatment would occur per the 2018 Black Hills Resilient Landscapes Project ROD. Is this activity within the project area for this current proposal? If so, were the cumulative effects of the two projects considered in the BHRL EIS, or will they be considered in the analysis for the current proposal? No other comments now. Please keep me informed on this proposal. Thanks!

Date submitted (UTC-11): 5/14/2021 12:00:00 AM

First name: Nancy

Last name: Hilding

Organization: Prairie Hills Audubon Society

Title: President

Comments:

Nancy Hilding to Forest Service. I submit the comments for Prairie Hills Audubon Society - as an attached document.

[text copied here from attached letter for coding purposes]

Nancy Hilding President

Prairie Hills Audubon Society

P.O. Box 788, Black Hawk, SD 57718 nhilshat@rapidnet.com

May, 14th, 2021

Jeffery Underhill Hell Canyon District

Black Hills National Forest, 1019 N 5th St.

Custer, SD 57730 jeffery.underhill@usda.gov

<https://cara.ecosystem-management.org/Public/CommentInput?project=59737>

Comments on the Pine and Aspen Restoration Project

Dear Mr. Underhill,

Thank you for giving the public a 14-day extension so we could visit the site after snow melted some.

The Pine and Aspen Restoration Project (PARP) would log spruce on up to 2,800 acres in SD, in an area about 9.5 miles NW of Deerfield Reservoir, that is also SW of Black Fox Campground and east of Beaver Creek Campground and Mallo Camp of Wyoming. It is in the Castle Creek Drainage.

Logging of spruce around aspen tiers to the NEPA document - Black Hills Resilient Landscape Project (BHRLP) of 2018, and logging spruce around pine would be done under a categorical exclusion (CE) relying on 36 CFR 220.6 (e) (25) (ii) and project is also needing to meet 36 CFR 220.6 (e) (25) (ii) (A). This means the project must [ldquo]be developed or refined through a collaborative process that includes multiple interested persons representing diverse interests[rdquo]. It also means it must have a primary purpose of [ldquo]meeting restoration objectives or increasing resilience[rdquo] and it may not exceed 2,800 acres. It can[rsquo]t construct or reconstruct more than .5 miles of permanent roads. Temporary roads are limited to 2.5 miles and must be decommissioned in 3 years. Repair/maintenance of roads/trails to address/prevent resource impacts is not included in mileage restrictions.

Question - How Much Spruce is in BHs Today?

The Pine and Aspen Restoration Project (PARP) claims that forest-wide, the total area of forestland typed as white spruce, has expanded from an estimated 15,000-20,000 acres, 1897- 1987, to over 50,000 acres presently. This document is partly tiered to the Black Hills Resilient Landscape Project (BHRLP) for which ROD was signed in 2018. The BHRL FEIS says at page 72 on a chart, that there are 24,289 acres of White Spruce or 2.21% of Forest and quaking aspen has 39,963 acres or 3.64% of Forest and mixed pine and aspen has 56,512 acres or 5.14% and birch has 4,248 acres or .39%. PARP is in part tiered to the BHRLP, and apparently in the last 3 years the amount of spruce in the Black Hills has almost doubled! Magic!

We wonder how this happened and if this is related to a change in the guidelines for assigning a cover type to stands rather than an actual increase in stands. However, if based on real values, it appears to be a serious [ldquo]changed circumstance[rdquo] and it is inappropriate to tier to BHRLP when such a huge change in spruce acres is alleged to have occurred in 3 years. If this is just that the FS changed the rules about how to inventory spruce, that is also a changed circumstance and it makes guidance in BHRLP and the Phase 2 Forest Plan obsolete. A SEIS is needed for BHRLP and the Plan needs to be revised and BHRLP it can[rsquo]t be used for this project till the SEIS is done.

NEPA regulations require that agencies [ldquo]shall[rdquo] prepare supplements to final EISs [ldquo]if a major Federal action remains to occur, and [hellip] [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.[rdquo] 40 C.F.R. [sect] 1502.9(d)(1) (2020). Forest Service directives echo this mandate. See Forest Service Handbook 1909.15, Ch. 18.

Historical Amounts of Spruce?

We can see the Forest Service inventorying of spruce almost doubling in 3 year[rsquo]s time (between BHRLP and PARP), we wonder about the historical allegations of the Black Hills just having 15,000-20,000 acres of spruce and wonder how the old-fashioned guys inventoried spruce. We suspect that the PARP relied on the Graves report and we always question Grave[rsquo]s report. 20% of the Forest had already been logged by the time Graves & friends got there [ndash] so how can we rely on his inventory to establish pre-Caucasian conditions? Graves was out there just before the major mountain pine bark beetle outbreak at the turn of the Century, which may have been larger than our recent outbreak. It would have substantially changed the standing inventory and cover type distribution.

We also question Graves as we think his surveyors did not uniformly visit the entire Forest but stayed closer to towns and roads. The balance of the inventory between remote area vs accessible area may have been messed up. Also, what was merchantable timber in 1897 was pretty much what you call old growth today. 9 inches DBH trees were not saw-logs back then and he would have considered much of the current inventory of saw-logs of the Black Hills as not merchantable timber, as it is just too small for Grave[rsquo]s era loggers. Areas on Graves maps with low timber inventory, could have been full of what the FS would call 4C today, but with trees just too small for Grave[rsquo]s era logging and they would not have contributed any board feet per acre to his maps or data. A real attempt at historical restoration, would substantially increase the age that pine trees get logged at the Black Hills and change the age of logged trees so as to actually comply with the CMAI.

What is really restoration

However, the Forest Service maintains we have too much spruce due to lack of forest fires. If we assume this is true, what we are actually missing in terms of a truthful historical restoration, are acres and acres of spruce snags killed by fire. Barring wildfire, for restoration by human management, we need spruce snags created by humans, such as girdling lots of spruce trees and creating habitat for snag dependent/associated species such as woodpeckers. That would be a true [ldquo]restoration[rdquo]. This might be good for some bird species, of which one is a sensitive species.

Fear for American Martins

American pine martens are a Region 2 sensitive species. Extraordinary circumstances are created and thus a categorical exclusion (CE) is not valid, if too much harm is done to them by the project that would be covered by the CE.

We once again cite [ldquo]changed circumstances[rdquo] should cause you to question the adequacy of the Phase 2 Forest Plan objectives, standards and guidelines to protect American martens. The martens in the Black Hills substantially depend on spruce stands, preferring its[rsquo] older and dense stands. In the Bear Lodge, which does not have spruce, they make do with old dense pine stands. The spruce stands in the BHs are too small to individually support a viable population and the martens must rely on connectivity corridors between the many smaller spruce stands. Forest Plan standard require connectivity corridors of at least 50% canopy closure. However, after years of MPBB outbreak and logging to prevent MPBB infestation, do martens have all the connectivity corridors they need? Old growth (SS 5) is reduced to .5 or .6% of the Forest and all SS 4C needs to be reserved for growing up to SS5. There is not enough SS 4B. The BHRLP at page 120 writes:

[ldquo]Marten population trend was relatively stable in the Black Hills through 2003 (USDA Forest Service 2004). The BHNH is conserving marten habitat (spruce) (USDA Forest Service 2015a), but population trends since 2003 are unknown. Mature, dense pine habitat has decreased since that time.[rdquo]

We also believe that Forest Plan annual and 5-year monitoring (done at years 2013-2014 and 2007-2012 respectively) and monitoring done for and Mountain Pine Beetle Response Project (MPBRP) (last done 2016-2017) are not up to date. If the required monitoring for BHRLP has been done, it has never been disclosed in an on-line annual report as required by the ROD. Without that monitoring we don[rsquo]t know the status of the habitat or populations Forest wide. We especially worry about species associated with large pine trees and older/denser pine stands or large snags or dense stands of snags. The existing snags killed by the beetle will eventually fall down and/or insects in them leave and thus make them useless for woodpecker forage, so we need replacement snags that were from large trees or dense mature stands.

We suggest that you don[rsquo]t reduce spruce stands on the Forest, before the release of updated Forest Plan[rsquo]s, BHRLP[rsquo]s and MPBRP[rsquo]s monitoring reports and depending on what they say, you hold off on cutting spruce till the new Forest Plan Revision or some SEISs on the BHRLP and MPBRP. We also worry about the BHNH continuing to cut at a 181,000 ASQ despite the findings of the Black Hills General Technical Report of the Rocky Mountain Research Station and how that cutting could impact the connectivity corridors needed for martens..

We also express concern for the trapping regulations of SDGFP. American martin are not allowed to be trapped. However, in west River SD required trap check times are set a Three and a partial day. Any marten caught in a trap that long will not likely survive even if released when trapper arrives. SDGFP does not require trappers to send trapping results to them. The Forest Service could close marten habitat to trapping, but it has not done so.

Fear for Rare Snails

We also believe that there are lots of snail colonies in the spruce sections of the project. The number of colonies is not disclosed in the scoping letter, but we were sent the wildlife report for Luhtasaari PBR project by the Norbeck Society. It seems to show lots of snails in the spruce areas. The Coopers [Rocky] Mountain Snail is another sensitive species and enough potential adverse impact to that species would invalidate the use of a CE due to extraordinary circumstances. We don[rsquo]t see how logging over deeper hard snow and chopped up trees debris protects snails. We haven[rsquo]t seen any information about snail inventories in the scoping letter. We also wish to express concern for the Frigid Amber Snail. WildEarth Guardians petitioned to have it listed. It has a Nature Serve rank of G1S1. The USFWS denied the petition because the snail experts didn[rsquo]t agree on the taxonomy. This doesn[rsquo]t mean the species should not be listed, if enough information was eventually collected by snail experts, so they could agree on the taxonomy. Do you have Frigid Amber Snails in the area and have you looked? We are concerned for all rare snails, but those have special interest as both have been petitioned for listing under the Federal Endangered Species Act and both denied in part because biologists don[rsquo]t agree on taxonomy.

Concern for Bald Eagle

Bald Eagle is another sensitive species. Deerfield Lake is sort of nearby. We want FS to do surveys for winter roost areas for it.

Concern for the Goshawks

Goshawks are a sensitive species for Region 2 and undue impacts to it would create extraordinary circumstances that could invalidate a CE. Goshawks don't often use spruce for nesting but they can. With the loss of old dense pine stands for nesting sites, perhaps they may temporarily use spruce more in the BHs. We hope you will consider the value of the spruce stands for goshawk nesting stands or forage and the spruce trees relationship to the local pine stands that Goshawks might use, such as they nesting on the edge of spruce and aspen..

Concern for Black Backed Woodpecker

The genetically distinct subspecies of black-backed woodpecker (BBWP) that lives only in the Black Hills requires large patches of very high snag basal area, with several dozen or more large snags per acre. We believe that black-backed woodpecker can use spruce stands killed by fire. We know some wood borers and insects attack spruce. We assume that BBWP would use spruce killed by attacks of insects. If dense, mature stands are targeted by commercial thinning or restoration projects, the basal area can become too low to provide suitable habitat even if eventually most of the trees in such stands are killed by fire, or some kind of insect.

A categorical exclusion can't be used if extraordinary circumstances would occur, which includes causing adverse impacts to Region 2 sensitive species. One of the sensitive species in the Forest is the black-backed woodpeckers (BBWP). Recent survey by University of Missouri student in 2015-2016 (ELIZABETH A. MATSEUR Thesis of 2017), projected high population abundance. However, the BBWP need trees that have died recently; 1-2 years post death being best, then 3 years post death and then 4-5 post death being progressively less optimal. The BHNH announced in press releases in April 2017 that the mountain pine bark beetle epidemic ended in 2016. As the MPBB associated tree death moves from epidemic to endemic levels, the BBWP population will not be able to find so much habitat and the abundance will fall.

We are not sure that if the Forest Service killed spruce by girdling or partially girdled spruce to stress and lead to death, if the stressed trees would attract wood borers or other insects and whether the BBWP could use those insects in those dead/dying spruce trees to survive between fires and epidemics. Spruce stands that are not cut down, could potentially die and provide habitat for black-backed woodpecker or you could kill them.

Concern for Red bellied snake

The Scoping letter does not provide us with a map of temporary road construction or log landings. It does not tell us which direction the trees will be pulled or skidded.

We have concern for the red-bellied snakes that might be in the drainage bottoms

Concern for Brown Creeper

The brown creeper is not a sensitive species but a management indicator. We think it likes dense spruce stands. We are concerned also for its well-being.

Concern for Rare Bats.

Please survey for caves or old mines in the area and protect the surrounding area if you find any with bats. Please provide adequate large trees to become large snags in the future. We have special concern for Townsend's big-eared bat and fringe tailed myotis and northern long eared bat.

Concern for Raptors

We hope you will protect the nesting sites of any raptors found and that you will look for them.

Concern for Rare Plants

We have concern for rare plants and as you are focused on removing spruce, we are concerned for those found in spruce. We are also concerned for those in the wet areas such as fens or riparian areas in the valleys. The scoping letter does not provide us with a map of temporary road construction or log landings. It does not tell us which direction the trees will be pulled or skidded.

We are also concerned for rare montane grasslands in the area and hope they are not degraded any more by your activities. If you disturb any ground you should reseed with appropriate seeds for a montane grassland.

Birds

Please discuss all birds that use the spruce and mixed stands you will be removing. There is a greater richness of bird species in mixed stands[hellip]it is better birding, and birding is a form of recreation on the forest.

Mixed Stands as habitat

Please discuss any special values associated with mixed stands as habitat. Concern for cultural heritage sites

We have concern for cultural sites, hope you search and identify and protect any and hope that the Native Americans are adequately consulted with.

Collaborative Process

We question what the statement in the PARP document means - [ldquo]be developed or refined through a collaborative process that includes multiple interested persons representing diverse interests[rdquo]. Is the FS has engaged in such a process already during development or does it only intend to do so in future as project is [ldquo]refined[rdquo]? As folks of [ldquo]diverse interests[rdquo] need to be engaged, does it intend to [ldquo]collaborate[rdquo] with folks from the native Americans, environmental and/or motorized and non-motorized recreation interests as well as loggers? We are concerned about inadequate information given in scoping document.

Supplemental NEPA Documents.

The recently released General Technical Report, tells the Forest Service it is over-logging the forest at a not-sustainable rate. We have grave concerns about this and believe that the Forest Service needs to do supplemental NEPA due to changed circumstances before it continues with many of its current projects. FS for sure needs to supplement the BHRLP to which you tier in part.

Concern about historic Aspen destroying/plowing up project

We believe that you once plowed an area in the western side of the project to remove aspen. You created hummocks in long lines of earth, that may be growing Oregon grapes. This is a completely unnatural area and we welcome you trying to bring back aspen in it. We hope you will recover all 500 acres, unless there is some resource needing protection, of which we are not aware.

Support for Aspen recovery.

We in general support recovery of aspen, but not at expense of other rare habitats. We would rather you remove younger pine from aspen, than remove spruce or large old growth pines. If you must remove spruce, we would rather it be for aspen (not pine) & you remove younger spruce not older spruce.

True Reasons?

Maybe you are doing this project because you have over cut the pine tress and your cutting is not sustainable and you have to search around to create pine stands to replace the ones you lost to over-logging.

Other questions

The Project scoping document on Pine and Aspen Restoration Project, does not provide enough data.

The below maps should have been included

1. topography
2. existing and planned roads - indicating quality of road and degree of closure.
3. the area of aspen that in the past was plowed up to remove aspen (west edge of project)
4. record of the recent logging - map of the cuts area with description of the cut
5. map of structural stages of pine after recent cutting and structural stages of spruce
6. planned locations of log landings
7. overlap of American Martin key habitat areas with the project.

What are the SMS and ROS class designations for the area? If necessary, to understand the designations, please include a map of such. Please discuss the scenic value of mixed stands in the foreground, as well as distance viewing

What are your findings for rare snail locations in the area, especially the two snails that have in the past been petitioned for federal listing - the black hills mountain snail (Coopers Mountain Snail) and frigid amber snail?

What is your information on American martens in the area and how does the FS map of American marten key habitat areas overlap the project? What information do you have on three toed woodpeckers use of the area? Are there any raptors nesting in or near the area? What searching for birds has been done?

Where are the log landings planned to be located? Are you dragging the cut spruce down the hills or up the hills?

What source are you using for the 1897 estimate of spruce on the forest? I assume Graves, but please state what source. How do you know if stands contained pine or aspen in the more recent past? What is your source for that conclusion?

It seems from the scoping letter, that you would be tiering part of the sale, to the BHRLP FEIS/ROD, so I assume the cutting to enhance aspen is not done under a CE but tiered to an FEIS and just the cutting of spruce is under the CE?

Why does the [ldquo]follow up treatment[rdquo] just watch out for success of pine regeneration and not watch out for success of aspen regeneration? Why are the cuts for recovering ponderosa pine larger and more frequent than recovering aspen cuts? When we were out there along the side of the road, many of the aspen clusters seemed to be small. Are you cutting a [ldquo]doughnut[rdquo] around every aspen you find or just some of them?

Thanks,

Nancy Hilding President

Prairie Hills Audubon Society

Nancy Hilding
President
Prairie Hills Audubon Society
P.O. Box 788, Black Hawk, SD 57718
nhilshat@rapidnet.com
May, 14th, 2021

Jeffery Underhill
Hell Canyon District
Black Hills National Forest,
1019 N 5th St.
Custer, SD 57730
jeffery.underhill@usda.gov
<https://cara.ecosystem-management.org/Public/CommentInput?project=59737>

Comments on the Pine and Aspen Restoration Project

Dear Mr. Underhill,

Thank you for giving the public a 14-day extension so we could visit the site after snow melted some.

The Pine and Aspen Restoration Project (PARP) would log spruce on up to 2,800 acres in SD, in an area about 9.5 miles NW of Deerfield Reservoir, that is also SW of Black Fox Campground and east of Beaver Creek Campground and Mallo Camp of Wyoming. It is in the Castle Creek Drainage.

Logging of spruce around aspen tiers to the NEPA document - Black Hills Resilient Landscape Project (BHRLP) of 2018, and logging spruce around pine would be done under a categorical exclusion (CE) relying on 36 CFR 220.6 (e) (25) (ii) and project is also needing to meet 36 CFR 220.6 (e) (25) (ii) (A). This means the project must "be developed or refined through a collaborative process that includes multiple interested persons representing diverse interests". It also means it must have a primary purpose of "meeting restoration objectives or increasing resilience" and it may not exceed 2,800 acres. It can't construct or reconstruct more than .5 miles of permanent roads. Temporary roads are limited to 2.5 miles and must be decommissioned in 3 years. Repair/maintenance of roads/trails to address/prevent resource impacts is not included in mileage restrictions.

Question - How Much Spruce is in BHs Today?

The Pine and Aspen Restoration Project (PARP) claims that forest-wide, the total area of forestland typed as white spruce, has expanded from an estimated 15,000-20,000 acres, 1897- 1987, to over 50,000 acres presently. This document is partly tiered to the Black Hills Resilient Landscape Project (BHRLP) for which ROD was signed in 2018. The BHRL FEIS

says at page 72 on a chart, that there are 24,289 acres of White Spruce or 2.21% of Forest and quaking aspen has 39,963 acres or 3.64% of Forest and mixed pine and aspen has 56,512 acres or 5.14% and birch has 4,248 acres or .39%. PARP is in part tiered to the BHRLP, and apparently in the last 3 years the amount of spruce in the Black Hills has almost doubled! Magic!

We wonder how this happened and if this is related to a change in the guidelines for assigning a cover type to stands rather than an actual increase in stands. However, if based on real values, it appears to be a serious “changed circumstance” and it is inappropriate to tier to BHRLP when such a huge change in spruce acres is alleged to have occurred in 3 years. If this is just that the FS changed the rules about how to inventory spruce, that is also a changed circumstance and it makes guidance in BHRLP and the Phase 2 Forest Plan obsolete. A SEIS is needed for BHRLP and the Plan needs to be revised and BHRLP it can’t be used for this project till the SEIS is done.

NEPA regulations require that agencies “shall” prepare supplements to final EISs “if a major Federal action remains to occur, and ... [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 C.F.R. § 1502.9(d)(1) (2020). Forest Service directives echo this mandate. See Forest Service Handbook 1909.15, Ch. 18.

Historical Amounts of Spruce?

We can see the Forest Service inventorying of spruce almost doubling in 3 year’s time (between BHRLP and PARP), we wonder about the historical allegations of the Black Hills just having 15,000-20,000 acres of spruce and wonder how the old-fashioned guys inventoried spruce. We suspect that the PARP relied on the Graves report and we always question Grave’s report. 20% of the Forest had already been logged by the time Graves & friends got there – so how can we rely on his inventory to establish pre-Caucasian conditions? Graves was out there just before the major mountain pine bark beetle outbreak at the turn of the Century, which may have been larger than our recent outbreak. It would have substantially changed the standing inventory and cover type distribution.

We also question Graves as we think his surveyors did not uniformly visit the entire Forest but stayed closer to towns and roads. The balance of the inventory between remote area vs accessible area may have been messed up. Also, what was merchantable timber in 1897 was pretty much what you call old growth today. 9 inches DBH trees were not saw-logs back then and he would have considered much of the current inventory of saw-logs of the Black Hills as not merchantable timber, as it is just too small for Grave’s era loggers. Areas on Graves maps with low timber inventory, could have been full of what the FS would call 4C today, but with trees just too small for Grave’s era logging and they would not have contributed any board feet per acre to his maps or data. A real attempt at historical restoration, would substantially increase the age that pine trees get logged at the Black Hills and change the age of logged trees so as to actually comply with the CMAI.

What is really restoration

However, the Forest Service maintains we have too much spruce due to lack of forest fires. If we assume this is true, what we are actually missing in terms of a truthful historical restoration, are acres and acres of spruce snags killed by fire. Barring wildfire, for restoration by human management, we need spruce snags created by humans, such as girdling lots of spruce trees and creating habitat for snag dependent/associated species such as woodpeckers. That would be a true "restoration". This might be good for some bird species, of which one is a sensitive species.

Fear for American Martins

American pine martens are a Region 2 sensitive species. Extraordinary circumstances are created and thus a categorical exclusion (CE) is not valid, if too much harm is done to them by the project that would be covered by the CE.

We once again cite "changed circumstances" should cause you to question the adequacy of the Phase 2 Forest Plan objectives, standards and guidelines to protect American martens. The martens in the Black Hills substantially depend on spruce stands, preferring its' older and dense stands. In the Bear Lodge, which does not have spruce, they make do with old dense pine stands. The spruce stands in the BHs are too small to individually support a viable population and the martens must rely on connectivity corridors between the many smaller spruce stands. Forest Plan standard require connectivity corridors of at least 50% canopy closure. However, after years of MPBB outbreak and logging to prevent MPBB infestation, do martens have all the connectivity corridors they need? Old growth (SS 5) is reduced to .5 or .6 % of the Forest and all SS 4C needs to be reserved for growing up to SS5. There is not enough SS 4B. The BHRLP at page 120 writes:

"Marten population trend was relatively stable in the Black Hills through 2003 (USDA Forest Service 2004). The BHNF is conserving marten habitat (spruce) (USDA Forest Service 2015a), but population trends since 2003 are unknown. Mature, dense pine habitat has decreased since that time."

We also believe that Forest Plan annual and 5-year monitoring (done at years 2013-2014 and 2007-2012 respectively) and monitoring done for and Mountain Pine Beetle Response Project (MPBRP) (last done 2016-2017) are not up to date. If the required monitoring for BHRLP has been done, it has never been disclosed in an on-line annual report as required by the ROD. Without that monitoring we don't know the status of the habitat or populations Forest wide. We especially worry about species associated with large pine trees and older/denser pine stands or large snags or dense stands of snags. The existing snags killed by the beetle will eventually fall down and/or insects in them leave and thus make them useless for woodpecker forage, so we need replacement snags that were from large trees or dense mature stands.

We suggest that you don't reduce spruce stands on the Forest, before the release of updated Forest Plan's, BHRLP's and MPBRP's monitoring reports and depending on what

they say, you hold off on cutting spruce till the new Forest Plan Revision or some SEISs on the BHRLP and MPBRP. We also worry about the BHNH continuing to cut at a 181,000 ASQ despite the findings of the Black Hills General Technical Report of the Rocky Mountain Research Station and how that cutting could impact the connectivity corridors needed for martens..

We also express concern for the trapping regulations of SDGFP. American martin are not allowed to be trapped. However, in west River SD required trap check times are set a Three and a partial day. Any marten caught in a trap that long will not likely survive even if released when trapper arrives. SDGFP does not require trappers to send trapping results to them. The Forest Service could close marten habitat to trapping, but it has not done so.

. Fear for Rare Snails

We also believe that there are lots of snail colonies in the spruce sections of the project. The number of colonies is not disclosed in the scoping letter, but we were sent the wildlife report for Luhtasaari PBR project by the Norbeck Society. It seems to show lots of snails in the spruce areas. The Coopers [Rocky] Mountain Snail is another sensitive species and enough potential adverse impact to that species would invalidate the use of a CE due to extraordinary circumstances. We don't see how logging over deeper hard snow and chopped up trees debris protects snails. We haven't seen any information about snail inventories in the scoping letter. We also wish to express concern for the Frigid Amber Snail. WildEarth Guardians petitioned to have it listed. It has a Nature Serve rank of G1S1. The USFWS denied the petition because the snail experts didn't agree on the taxonomy. This doesn't mean the species should not be listed, if enough information was eventually collected by snail experts, so they could agree on the taxonomy. Do you have Frigid Amber Snails in the area and have you looked? We are concerned for all rare snails, but those have special interest as both have been petitioned for listing under the Federal Endangered Species Act and both denied in part because biologists don't agree on taxonomy.

Concern for Bald Eagle

Bald Eagle is another sensitive species. Deerfield Lake is sort of nearby. We want FS to do surveys for winter roost areas for it.

Concern for the Goshawks

Goshawks are a sensitive species for Region 2 and undue impacts to it would create extraordinary circumstances that could invalidate a CE. Goshawks don't often use spruce for nesting but they can. With the loss of old dense pine stands for nesting sites, perhaps they may temporarily use spruce more in the BHs. We hope you will consider the value of the spruce stands for goshawk nesting stands or forage and the spruce trees relationship to the local pine stands that Goshawks might use, such as they nesting on the edge of spruce and aspen..

Concern for Black Backed Woodpecker

The genetically distinct subspecies of black-backed woodpecker (BBWP) that lives only in the Black Hills requires large patches of very high snag basal area, with several dozen or more large snags per acre. We believe that black-backed woodpecker can use spruce stands killed by fire. We know some wood borers and insects attack spruce. We assume that BBWP would use spruce killed by attacks of insects. If dense, mature stands are targeted by commercial thinning or restoration projects, the basal area can become too low to provide suitable habitat even if eventually most of the trees in such stands are killed by fire, or some kind of insect.

A categorical exclusion can't be used if extraordinary circumstances would occur, which includes causing adverse impacts to Region 2 sensitive species. One of the sensitive species in the Forest is the black-backed woodpeckers (BBWP). Recent survey by University of Missouri student in 2015-2016 (ELIZABETH A. MATSEUR Thesis of 2017), projected high population abundance. However, the BBWP need trees that have died recently; 1-2 years post death being best, then 3 years post death and then 4-5 post death being progressively less optimal. The BBNF announced in press releases in April 2017 that the mountain pine bark beetle epidemic ended in 2016. As the MPBB associated tree death moves from epidemic to endemic levels, the BBWP population will not be able to find so much habitat and the abundance will fall.

We are not sure that if the Forest Service killed spruce by girdling or partially girdled spruce to stress and lead to death, if the stressed trees would attract wood borers or other insects and whether the BBWP could use those insects in those dead/dying spruce trees to survive between fires and epidemics. Spruce stands that are not cut down, could potentially die and provide habitat for black-backed woodpecker or you could kill them.

Concern for Red bellied snake

The Scoping letter does not provide us with a map of temporary road construction or log landings. It does not tell us which direction the trees will be pulled or skidded. We have concern for the red-bellied snakes that might be in the drainage bottoms

Concern for Brown Creeper

The brown creeper is not a sensitive species but a management indicator. We think it likes dense spruce stands. We are concerned also for its well-being.

Concern for Rare Bats.

Please survey for caves or old mines in the area and protect the surrounding area if you find any with bats. Please provide adequate large trees to become large snags in the future. We have special concern for Townsend's big-eared bat and fringe tailed myotis and northern long eared bat.

Concern for Raptors

We hope you will protect the nesting sites of any raptors found and that you will look for them.

Concern for Rare Plants

We have concern for rare plants and as you are focused on removing spruce, we are concerned for those found in spruce. We are also concerned for those in the wet areas such as fens or riparian areas in the valleys. The scoping letter does not provide us with a map of temporary road construction or log landings. It does not tell us which direction the trees will be pulled or skidded.

We are also concerned for rare montane grasslands in the area and hope they are not degraded any more by your activities. If you disturb any ground you should reseed with appropriate seeds for a montane grassland.

Birds

Please discuss all birds that use the spruce and mixed stands you will be removing. There is a greater richness of bird species in mixed stands...it is better birding, and birding is a form of recreation on the forest.

Mixed Stands as habitat

Please discuss any special values associated with mixed stands as habitat.

Concern for cultural heritage sites

We have concern for cultural sites, hope you search and identify and protect any and hope that the Native Americans are adequately consulted with.

Collaborative Process

We question what the statement in the PARP document means - "*be developed or refined through a collaborative process that includes multiple interested persons representing diverse interests*". Is the FS has engaged in such a process already during development or does it only intend to do so in future as project is "refined"? As folks of "diverse interests" need to be engaged, does it intend to "collaborate" with folks from the native Americans, environmental and/or motorized and non-motorized recreation interests as well as loggers? We are concerned about inadequate information given in scoping document.

Supplemental NEPA Documents.

The recently released General Technical Report, tells the Forest Service it is over-logging the forest at a not-sustainable rate. We have grave concerns about this and believe that the Forest Service needs to do supplemental NEPA due to changed circumstances before it continues with many of its current projects. FS for sure needs to supplement the BHRLP to which you tier in part.

Concern about historic Aspen destroying/plowing up project

We believe that you once plowed an area in the western side of the project to remove aspen. You created hummocks in long lines of earth, that may be growing Oregon grapes. This is a completely unnatural area and we welcome you trying to bring back aspen in it. We hope you will recover all 500 acres, unless there is some resource needing protection, of which we are not aware.

Support for Aspen recovery.

We in general support recovery of aspen, but not at expense of other rare habitats. We would rather you remove younger pine from aspen, than remove spruce or large old growth pines. If you must remove spruce, we would rather it be for aspen (not pine) & you remove younger spruce not older spruce.

True Reasons?

Maybe you are doing this project because you have over cut the pine tress and your cutting is not sustainable and you have to search around to create pine stands to replace the ones you lost to over-logging.

Other questions

The Project scoping document on Pine and Aspen Restoration Project, does not provide enough data.

The below maps should have been included

1. topography
2. existing and planned roads - indicating quality of road and degree of closure.
3. the area of aspen that in the past was plowed up to remove aspen (west edge of project)
4. record of the recent logging - map of the cuts area with description of the cut
5. map of structural stages of pine after recent cutting and structural stages of spruce
6. planned locations of log landings
7. overlap of American Martin key habitat areas with the project.

What are the SMS and ROS class designations for the area? If necessary, to understand the designations, please include a map of such. Please discuss the scenic value of mixed stands in the foreground, as well as distance viewing

What are your findings for rare snail locations in the area, especially the two snails that have in the past been petitioned for federal listing - the black hills mountain snail (Coopers Mountain Snail) and frigid amber snail?

What is your information on American martens in the area and how does the FS map of American marten key habitat areas overlap the project? What information do you have on three toed woodpeckers use of the area? Are there any raptors nesting in or near the area? What searching for birds has been done?

Where are the log landings planned to be located? Are you dragging the cut spruce down the hills or up the hills?

What source are you using for the 1897 estimate of spruce on the forest? I assume Graves, but please state what source. How do you know if stands contained pine or aspen in the more recent past? What is your source for that conclusion?

It seems from the scoping letter, that you would be tiering part of the sale, to the BHRLP FEIS/ROD, so I assume the cutting to enhance aspen is not done under a CE but tiered to an FEIS and just the cutting of spruce is under the CE?

Why does the "follow up treatment" just watch out for success of pine regeneration and not watch out for success of aspen regeneration? Why are the cuts for recovering ponderosa pine larger and more frequent than recovering aspen cuts? When we were out there along the side of the road, many of the aspen clusters seemed to be small. Are you cutting a "doughnut" around every aspen you find or just some of them?

Thanks,

A handwritten signature in black ink, appearing to read "Nancy Hilding", with a stylized flourish at the end.

Nancy Hilding
President
Prairie Hills Audubon Society

From: Nancy Hilding nhilshat@rapidnet.com
Subject: Pine and Aspen Restoration Project - Comments and questions
Date: May 9, 2021 at 9:39 PM
To: jeffery.underhill@usda.gov

N

Nancy Hilding
President
Prairie Hills Audubon Society
P.O. Box 788, Black Hawk, SD 57718
nhilshat@rapidnet.com
May, 9th, 2021

Jeffery Underhill
Hell Canyon District
Black Hills National Forest,
1019 N 5th St.
Custer, SD 57730

Dear Mr. Underhill,

Questions about - Pine and Aspen Restoration Project

Some of us drove out to the Pine and Aspen Restoration Project on Saturday. Thanks for giving the 2 week extension so we could do that.

The Project scoping document on Pine and Aspen Restoration Project, does not provide enough data.

The below maps should have been included and I would like these maps before the comment deadline if possible:

Can you send me maps of:

1. topography
2. existing and planned roads - indicating quality of road and degree of closure.
3. the area of aspen that in the past was plowed up to remove aspen (west edge of project)
4. record of the recent logging we saw out there...map of the cuts area with description of the cut
5. map of structural stages of pine after recent cutting
6. planned locations of log landings
7. overlap of American Martin key habitat areas with the project.

What are the SMS and ROS designations for the area? If necessary to understand the designations, please send me a map of such.

What are your findings for rare snail locations in the area, especially the two snails that have in the past been petitioned for federal listing - the black hills mountain snail (Coopers Mountain Snail) and frigid amber snail? One of these is a FS sensitive species. How thorough is your past searching for them, especially the frigid amber snail? How does operating equipment in the snow and over logging slash protect snails? Last Forest Plan monitoring report was for 2013-2014, what kind of monitoring is being done for snails forest wide since 2014? How can we feel safe about their status given the over-cutting identified in the General Technical Report?

What is your information on American martens in the area and how the map of American marten key habitat areas overlap the project. Last Forest Plan monitoring report was for 2013-2014, what kind of monitoring is being done for marten forest wide since 2014? How can we feel safe about their status given the over-cutting identified in the General Technical Report? What information do you have on three toed woodpecker use of the area? Are there any raptors nesting in or near the area? What searching for birds has been done?

Where are the log landings planned to be located? Are you dragging the cut spruce down the hills or up the hills?

What source are you using for the 1897 estimate of spruce on the forest? I assume Graves, but please state what source. How do you know if stands contained pine or aspen in the past? What is your source for that conclusion?

It seems from the scoping letter, that you would be tiering part of the sale, to the BHRLP FEIS/ROD, so I assume the cutting to enhance aspen is not done under a CE but tiered to an FEIS and just the cutting of spruce is under the CE?

Why does the "follow up treatment" just watch out for success of pine regeneration and not watch out for success of aspen regeneration? Why are the cuts for recovering ponderosa pine larger and more frequent than recovering aspen cuts? When we were out there along the side of the road, many of the aspen clusters seemed to be small. Are you cutting a "doughnut" around every aspen you find or just some of them?

What is "a collaborative outreach effort" that will be used to refine the project design?

If possible I would like at least some of the information before the deadline of Friday, especially the maps.

Are you relying on 36 CFR 220.6 (e) (25) (H)? (See quote of it below)

§ 220.6 Categorical exclusions.

(e) Categories of actions for which a project or case file and decision memo are required. A supporting record is required and the decision to proceed must be documented in a decision memo for the categories of action in paragraphs (e)(1) through (25) of this section. As a minimum, the project or case file should include any records prepared, such as: The names of interested and affected people, groups, and agencies contacted; the determination that no extraordinary circumstances exist; a copy of the decision memo;

people, groups, and agencies contacted; the determination that no extraordinary circumstances exist; a copy of the decision memo; and a list of the people notified of the decision. If the proposed action is approval of a land management plan, plan amendment, or plan revision, the plan approval document required by 36 CFR part 219 satisfies the decision memo requirements of this section.

(25) Forest and grassland management activities with a primary purpose of meeting restoration objectives or increasing resilience. Activities to improve ecosystem health, resilience, and other watershed and habitat conditions may not exceed 2,800 acres.

(i) Activities to meet restoration and resilience objectives may include, but are not limited to:

- (A) Stream restoration, aquatic organism passage rehabilitation, or erosion control;
- (B) Invasive species control and reestablishment of native species;
- (C) Prescribed burning;
- (D) Reforestation;
- (E) Road and/or trail decommissioning (system and non-system);
- (F) Pruning;
- (G) Vegetation thinning; and
- (H) Timber harvesting.

(ii) The following requirements or limitations apply to this category:

(A) Projects shall be developed or refined through a collaborative process that includes multiple interested persons representing diverse interests;

(B) Vegetation thinning or timber harvesting activities shall be designed to achieve ecological restoration objectives, but shall not include salvage harvesting as defined in Agency policy; and

(C) Construction and reconstruction of permanent roads is limited to 0.5 miles. Construction of temporary roads is limited to 2.5 miles, and all temporary roads shall be decommissioned no later than 3 years after the date the project is completed. Projects may include repair and maintenance of NFS roads and trails to prevent or address resource impacts; repair and maintenance of NFS roads and trails is not subject to the above mileage limits.

Thanks,

Nancy Hildling

=====

Nancy Hilding
6300 West Elm, Black Hawk, SD 57718

or

Prairie Hills Audubon Society
P.O. Box 788, Black Hawk, SD 57718

nhilshat@rapidnet.com

605-787-6779, does not have voice mail

605-787-6466, has voice mail

605-787-2806, cell (new #)

<http://www.phas-wsd.org>

<https://www.facebook.com/phas.wsd/>

Skype phone & name -605-787-1248, nancy.hilding

Date submitted (UTC-11): 5/14/2021 6:53:25 PM

First name: Nancy

Last name: Hilding

Organization:

Title:

Comments:

Nancy Hilding

6300 West Elm

Black Hawk, SD 57718

Dear Forest Service,

We went out there last Saturday to drive around and look at the project, arriving from Black Fox Campground. We kept getting lost. You don't have enough road signs out there with the road numbers on them. Please put more road signs up, especially at intersections.

I want you to protect spruce, we don't have enough of it on this forest. I don't feel at all secure that you are providing well for the American Pine Martin.

I fear you have gotten into trouble harvesting too much pine and now you want to harm spruce to make up for your over harvest of pine. I do however want more aspen on the forest. More aspen, birch, oak and spruce to replace pine and give us more diversity in cover. Aspen is less flammable than pine.

Date submitted (UTC-11): 5/9/2021 12:00:00 AM

First name: Nancy

Last name: Hilding

Organization: Prairie Hills Audubon Society

Title: President

Comments:

From: Nancy Hilding nhilshat@rapidnet.com

Subject: Pine and Aspen Restoration Project - Comments and questions

Date: May 9, 2021 at 9:39 PM

To: jeffery.underhill@usda.gov

Nancy Hilding President

Prairie Hills Audubon Society

P.O. Box 788, Black Hawk, SD 57718 nhilshat@rapidnet.com

May, 9th, 2021

Jeffery Underhill Hell Canyon District

Black Hills National Forest, 1019 N 5th St.

Custer, SD 57730 Dear Mr. Underhill,

Questions about - Pine and Aspen Restoration Project

Some of us drove out to the Pine and Aspen Restoration Project on Saturday. Thanks for giving the 2 week extension so we could do that.

The Project scoping document on Pine and Aspen Restoration Project, does not provide enough data.

The below maps should have been included and I would like these maps before the comment deadline if possible:. Can you send me maps of:

1. topography
2. existing and planned roads - indicating quality of road and degree of closure.
3. the area of aspen that in the past was plowed up to remove aspen (west edge of project)
4. record of the recent logging we saw out there[hellip]map of the cuts area with description of the cut
5. map of structural stages of pine after recent cutting
6. planned locations of log landings
7. overlap of American Martin key habitat areas with the project.

What are the SMS and ROS designations for the area? If necessary to understand the designations, please send me a map of such.

What are your findings for rare snail locations in the area, especially the two snails that have in the past been petitioned for federal listing -

the black hills mountain snail (Coopers Mountain Snail) and frigid amber snail? One of these is a FS sensitive species. How thorough is your past searching for them, especially the frigid amber snail? How does operating equipment in the snow and over logging slash protect snails? Last Forest Plan monitoring report was for 2013-2014, what kind of monitoring is being done for snails forest wide since 2014? How can we feel safe about their status given the over-cutting identified in the General Technical Report?

What is your information on American martens in the area and how the map of American marten key habitat areas overlap the project.

. Last Forest Plan monitoring report was for 2013-2014, what kind of monitoring is being done for marten forest wide since 2014? How can we feel safe about their status given the over-cutting identified in the General Technical Report? What information do you have on three toed woodpecker use of the area? Are there any raptors nesting in or near the area? What searching for birds has been done?

Where are the log landings planned to be located? Are you dragging the cut spruce down the hills or up the hills?

What source are you using for the 1897 estimate of spruce on the forest? I assume Graves, but please state what source. How do you know if stands contained pine or aspen in the past? What is your source for that conclusion?

It seems from the scoping letter, that you would be tiering part of the sale, to the BHRLP FEIS/ROD, so I assume the cutting to enhance aspen is not done under a CE but tiered to an FEIS and just the cutting of spruce is under the CE?

Why does the "follow up treatment" just watch out for success of pine regeneration and not watch out for success of aspen regeneration? Why are the cuts for recovering ponderosa pine larger and more frequent than recovering aspen cuts? When we were out there along the side of the road, many of the aspen clusters seemed to be small.

Are you cutting a "doughnut" around every aspen you find or just some of them?. What is "a collaborative outreach effort" that will be used to refine the project design?

If possible I would like at least some of the information before the deadline of Friday, especially the maps. Are you relying on 36 CFR 220.6 (e) (25) (H)? (See quote of it below)

[sect] 220.6 Categorical exclusions.

(e)Categories of actions for which a project or case file and decision memo are required. A supporting record is required and the decision to proceed must be documented in a decision memo for the categories of action in paragraphs (e)(1) through (25) of this section. As a minimum, the project or case file should include any

records prepared, such as: The names of interested and affected people, groups, and agencies contacted; the determination that no extraordinary circumstances exist; a copy of the decision memo;

and a list of the people notified of the decision. If the proposed action is approval of a land management plan, plan amendment, or plan revision, the plan approval document required by 36 CFR part 219 satisfies the decision memo requirements of this section.

(25) Forest and grassland management activities with a primary purpose of meeting restoration objectives or increasing resilience. Activities to improve ecosystem health, resilience, and other watershed and habitat conditions may not exceed 2,800 acres.

1. Activities to meet restoration and resilience objectives may include, but are not limited to:

1. Stream restoration, aquatic organism passage rehabilitation, or erosion control;
2. Invasive species control and reestablishment of native species;
3. Prescribed burning;
4. Reforestation;
5. Road and/or trail decommissioning (system and non-system);
6. Pruning;
7. Vegetation thinning; and
8. Timber harvesting.

2. The following requirements or limitations apply to this category:

1. Projects shall be developed or refined through a collaborative process that includes multiple interested persons representing diverse interests;
2. Vegetation thinning or timber harvesting activities shall be designed to achieve ecological restoration objectives, but shall not include salvage harvesting as defined in

Agency policy; and

1.

1. Construction and reconstruction of permanent roads is limited to 0.5 miles. Construction of temporary roads is limited to 2.5 miles, and all temporary roads shall be

decommissioned no later than 3 years after the date the project is completed. Projects may include repair and maintenance of NFS roads and trails to prevent or address

resource impacts; repair and maintenance of NFS roads and trails is not subject to the above mileage limits.

Thanks, Nancy Hildling

=====

Nancy Hildling

6300 West Elm, Black Hawk, SD 57718 or

Prairie Hills Audubon Society

P.O. Box 788, Black Hawk, SD 57718 nhilshat@rapidnet.com

605-787-6779, does not have voice mail 605-787-6466, has voice mail

605-787-2806, cell (new #) <http://www.phas-wsd.org><https://www.facebook.com/phas.wsd/>

Skype phone & name -605-787-1248, nancy.hilding

Date submitted (UTC-11): 5/14/2021 12:00:00 AM
First name: Sarah
Last name: Johnson
Organization: Native Ecosystems Council
Title: Director
Comments:
[text from attached letter copied here for coding purposes]

May 14, 2021

Jeff Underhill, District Ranger
Hell Canyon Ranger District
Black Hills National Forest
1019 N. 5th Street
Custer, SD 57730

RE: COMMENTS FROM NATIVE ECOSYSTEMS COUNCIL (NEC) ON THE PROPOSED PINE AND ASPEN RESTORATION PROJECT

Hello,

Native Ecosystems Council would like to submit the following comments on the proposed Pine and Aspen Restoration Project on the Hells Canyon Ranger District of the Black Hills National Forest.

1. The term "restoration" does not include wildlife and is invalid as per the National Forest Management Act (NFPA).

There is no basis for managing forests without addressing wildlife habitat. It is clear this is a logging project that will create severe impacts to wildlife, especially those species that require dense, older forest habitat. As was noted in your scoping notice, there are only 0.5% old growth forest stands in this landscape, while the Forest Plan objective is 5%. It is irrational to define older forest stands are just one species, such as ponderosa pine or spruce. Mixed conifer/aspen stands that are dense and old provide the highest quality wildlife habitat on this forest. To claim that removing spruce will restore historical conditions is false, as historical conditions clearly had abundant wildlife species associated with dense older forests. If the agency is going to call this a restoration project, please define what wildlife species will be restored with this logging. Otherwise simply call it a logging project.

2. This reduction of old growth habitat does not qualify as a non-significant impact because the levels of old growth forest recommended for wildlife are not currently being met, meaning significant impacts already exist to old growth wildlife.

The current best science identifies a minimum of 20-25% old growth needed for forest birds; if this level of old growth is not currently being met on the BHNF, and more old growth will be removed, this does not qualify as a categorical exclusion, since significant impacts already exist. It is clear that old growth forests and associated wildlife are what need to be restored, not reduced further, on this National Forest. The scoping notice did not define what the historical levels of old growth were on this forest, even though the agency is claiming this is a restoration project. Please define what the historical levels of old growth forests were in this landscape, and how this project will address these historical levels, instead of the agency claiming that there are too many spruce as compared to historical conditions. It is not even clear how this was determined. We note that wildlife associated with old growth forests are not generally selecting for a particular tree species, but for the forest conditions that are present. Cutting down spruce old growth to create ponderosa pine old at some distant time in the future is not valid wildlife management.

3. It is clear that this project will have adverse impacts on sensitive wildlife species on the BHNF.

The sensitive species on the BHNF include the pine marten, black-backed woodpecker, and northern goshawk. The goshawk and pine marten depend heavily on red squirrels as an important prey species. The project will reduce red squirrels in logged areas, and thus reduce prey for the marten and goshawk. The black-backed woodpecker also depends heavily upon dense, older forests with abundant dead trees. The thinning will clearly reduce foraging habitat for this species. Given that this "restoration project" will degrade habitat for 3 BHNF sensitive species, it is not clear why it is called a restoration project. This is a violation of the NEPA as well as the Administrative Procedures Act, as it is illogical for the agency to claim to the public that reducing sensitive wildlife species is required to manage this national forest.

4. There is no available monitoring data to indicate that this continued reduction of more dense, older mixed conifer forests on the BHNF will not exacerbate ongoing declines of forest sensitive species as the goshawk, marten and black-backed woodpecker.

The Forest Plan monitoring requirements to be completed in order to demonstrate, among other things, that the agency is maintaining a diversity of wildlife species across the BHNF, is not being done by the agency. As such, there is no basis for claiming that further reductions in habitat for at least 3 sensitive wildlife species, the goshawk, marten, and black-backed woodpecker will not have significant cumulative impacts. Due to the agency's violations of the NFMA requirements for Forest Plan monitoring of impacts to wildlife, this National Forest has no basis for implementing categorical exclusions for logging projects which remove habitat for wildlife.

5. The scoping notice indicated that structural stage 5 is not meeting the objectives of the Forest Plan; a CE requires compliance with the Forest Plan, which means this project cannot be implemented as a CE.

The scoping notice only mentioned structural stage 5 in regards for Forest Plan objectives. There may be other structural stages that are also not in compliance with the Forest Plan. The effects of this project on all structural stage levels that currently exist, and how these comply with the Forest Plan, need to be provided to the public.

If the project is being justified as a "restoration project," while at the same time is not consistent with the Forest Plan structural stage objectives, then the public is being misled about the rationale for the project, in violation of the NEPA.

6. The recent concern about the plight of North American landbirds, including western forest birds, was not addressed in the scoping notice; this is a new conservation issue, in regards to the NFMA as well as the Migratory Bird Treaty Act (MBTA), that needs to be addressed for this project will which degrade habitat for many migratory bird species.

With the identified declines of North American landbirds of over 3 billion birds since the mid-1970s, the Forest Service must address their responsibility to manage public forest lands to conserve this broad suite of species. Western forest birds alone have declined by over a billion birds, and 64% of the 67 species of western forest birds are in decline. The Forest Service cannot adhere to the NEPA and the NFMA without defining how the proposed project will "restore" populations of these species. The NFMA and the NEPA does not allow the Forest Service to limit environmental assessments to just specific species identified by the agency, such as sensitive species. In this case, the impact of this project on the entire suite of western forest birds needs to be addressed because this is an ongoing ecological crisis.

7. In conclusion, the agency needs to provide a reasonable level of environmental analysis for this proposed project.

Please define what the historical levels of old growth forest were on the BHNF, and how any shortfalls are impacting associated wildlife species, including western forest birds that are in decline. Please provide the monitoring information as to how forest management is maintaining adequate populations of forest sensitive species, including the pine marten, goshawk, and black-backed woodpecker. Please define what the current structural stage composition is on the BHNF, and how any failures to meet these objectives are impacting wildlife, via monitoring. And finally, please define what populations of wildlife on the BHNF are in decline and thus need restoration activities, including an increase in dense, mixed conifer/aspen older forest habitat.

Regards,

Sara Johnson, Director

Native Ecosystems Council

PO Box 125

Willow Creek, MT 59760

Phone: 406-579-3286

sjohnsonkoa@yahoo.com

May 14, 2021

Jeff Underhill, District Ranger
Hell Canyon Ranger District
Black Hills National Forest
1019 N. 5th Street
Custer, SD 57730

RE: COMMENTS FROM NATIVE ECOSYSTEMS COUNCIL (NEC)
ON THE PROPOSED PINE AND ASPEN RESTORATION PROJECT

Hello,

Native Ecosystems Council would like to submit the following comments on the proposed Pine and Aspen Restoration Project on the Hells Canyon Ranger District of the Black Hills National Forest.

1. The term “restoration” does not include wildlife and is invalid as per the National Forest Management Act (NFPA).

There is no basis for managing forests without addressing wildlife habitat. It is clear this is a logging project that will create severe impacts to wildlife, especially those species that require dense, older forest habitat. As was noted in your scoping notice, there are only 0.5% old growth forest stands in this landscape, while the Forest Plan objective is 5%. It is irrational to define older forest stands are just one species, such as ponderosa pine or spruce. Mixed conifer/aspen stands that are dense and old provide the highest quality wildlife habitat on this forest. To claim that removing spruce will restore historical conditions is false, as historical conditions clearly had abundant wildlife species associated with dense older forests. If the agency is going to call this a restoration project, please define what wildlife species will be restored with this logging. Otherwise simply call it a logging project.

2. This reduction of old growth habitat does not qualify as a non-significant impact because the levels of old growth forest recommended for wildlife are not currently being met, meaning significant impacts already exist to old growth wildlife.

The current best science identifies a minimum of 20-25% old growth needed for forest birds; if this level of old growth is not currently being met on the

BHNF, and more old growth will be removed, this does not qualify as a categorical exclusion, since significant impacts already exist. It is clear that old growth forests and associated wildlife are what need to be restored, not reduced further, on this National Forest. The scoping notice did not define what the historical levels of old growth were on this forest, even though the agency is claiming this is a restoration project. Please define what the historical levels of old growth forests were in this landscape, and how this project will address these historical levels, instead of the agency claiming that there are too many spruce as compared to historical conditions. It is not even clear how this was determined. We note that wildlife associated with old growth forests are not generally selecting for a particular tree species, but for the forest conditions that are present. Cutting down spruce old growth to create ponderosa pine old at some distant time in the future is not valid wildlife management.

3. It is clear that this project will have adverse impacts on sensitive wildlife species on the BHNF.

The sensitive species on the BHNF include the pine marten, black-backed woodpecker, and northern goshawk. The goshawk and pine marten depend heavily on red squirrels as an important prey species. The project will reduce red squirrels in logged areas, and thus reduce prey for the marten and goshawk. The black-backed woodpecker also depends heavily upon dense, older forests with abundant dead trees. The thinning will clearly reduce foraging habitat for this species. Given that this “restoration project” will degrade habitat for 3 BHNF sensitive species, it is not clear why it is called a restoration project. This is a violation of the NEPA as well as the Administrative Procedures Act, as it is illogical for the agency to claim to the public that reducing sensitive wildlife species is required to manage this national forest.

4. There is no available monitoring data to indicate that this continued reduction of more dense, older mixed conifer forests on the BHNF will not exacerbate ongoing declines of forest sensitive species as the goshawk, marten and black-backed woodpecker.

The Forest Plan monitoring requirements to be completed in order to demonstrate, among other things, that the agency is maintaining a diversity of wildlife species across the BHNF, is not being done by the agency. As such, there is no basis for claiming that further reductions in habitat for at

least 3 sensitive wildlife species, the goshawk, marten, and black-backed woodpecker will not have significant cumulative impacts. Due to the agency's violations of the NFMA requirements for Forest Plan monitoring of impacts to wildlife, this National Forest has no basis for implementing categorical exclusions for logging projects which remove habitat for wildlife.

5. The scoping notice indicated that structural stage 5 is not meeting the objectives of the Forest Plan; a CE requires compliance with the Forest Plan, which means this project cannot be implemented as a CE.

The scoping notice only mentioned structural stage 5 in regards for Forest Plan objectives. There may be other structural stages that are also not in compliance with the Forest Plan. The effects of this project on all structural stage levels that currently exist, and how these comply with the Forest Plan, need to be provided to the public. If the project is being justified as a "restoration project," while at the same time is not consistent with the Forest Plan structural stage objectives, then the public is being misled about the rationale for the project, in violation of the NEPA.

6. The recent concern about the plight of North American landbirds, including western forest birds, was not addressed in the scoping notice; this is a new conservation issue, in regards to the NFMA as well as the Migratory Bird Treaty Act (MBTA), that needs to be addressed for this project will which degrade habitat for many migratory bird species.

With the identified declines of North American landbirds of over 3 billion birds since the mid-1970s, the Forest Service must address their responsibility to manage public forest lands to conserve this broad suite of species. Western forest birds alone have declined by over a billion birds, and 64% of the 67 species of western forest birds are in decline. The Forest Service cannot adhere to the NEPA and the NFMA without defining how the proposed project will "restore" populations of these species. The NFMA and the NEPA does not allow the Forest Service to limit environmental assessments to just specific species identified by the agency, such as sensitive species. In this case, the impact of this project on the entire suite of western forest birds needs to be addressed because this is an ongoing ecological crisis.

7. In conclusion, the agency needs to provide a reasonable level of environmental analysis for this proposed project.

Please define what the historical levels of old growth forest were on the BHNF, and how any shortfalls are impacting associated wildlife species, including western forest birds that are in decline. Please provide the monitoring information as to how forest management is maintaining adequate populations of forest sensitive species, including the pine marten, goshawk, and black-backed woodpecker. Please define what the current structural stage composition is on the BHNF, and how any failures to meet these objectives are impacting wildlife, via monitoring. And finally, please define what populations of wildlife on the BHNF are in decline and thus need restoration activities, including an increase in dense, mixed conifer/aspen older forest habitat.

Regards,

Sara Johnson, Director
Native Ecosystems Council
PO Box 125
Willow Creek, MT 59760
Phone: 406-579-3286
sjjohnsonkoa@yahoo.com

Date submitted (UTC-11): 5/3/2021 11:59:08 AM

First name: Dave

Last name: Mertz

Organization:

Title:

Comments:

See attached file

Comments on the Pine and Restoration Projects

A review of the project area on Google Earth and the provided map shows that spruce is quite prevalent. It also shows that there has been extensive logging since 2005 across the project area. It appears that there many acres of group selection and/or patch cutting that happened between 2005 and 2009. Are all of these areas being managed with uneven-age management? How much of this type of cutting was in pine and how much in spruce? It appears that a number of the stands proposed for harvest have already had patch cutting from that time period. What was the purpose and need for that timber harvesting? Similar to the purpose and need for this project?

If the purpose for the previous patch cutting was similar to this project, how successful was it at reestablishing pine? A site visit to a small sample of these patches revealed very little pine regeneration within the patches. Instead, it appeared that spruce was the dominant regeneration. Will that happen again with this project?

How extensive is spruce across the forest? It would be helpful to see a map of the forest that shows spruce stands. Are extensive areas of spruce, such as the project area unique, or are there a number of other areas such as this?

A site visit to the project area revealed that recent logging had been completed, presumably some of the Luthasaari Project?





This had the appearance that it had been completed within the last year? The question is, why is there a need to go back into this project area after the recent completion of the Oatman and Luthasaari projects? And these projects were implemented not long after the harvesting from 2005-2009. I understand that the purpose and need of the two recent projects was to mitigate the mountain pine beetle, but is there really an urgent need to be back there again simply to reduce spruce? A weed study on the Black Hills NF concluded that it would be prudent to let project areas recover for 20 years to let weeds work themselves out of the system, prior to the next timber harvest disturbance. Will any cumulative effects analysis be conducted for this project that will evaluate the impacts of all the timber harvesting within the project area over the last 15 years? In addition, just to the east of the project area, there has been timber harvesting in the Lyons project area under the BHRL project. Will cumulative effects be analyzed with this as well?

Overall, it appears that this project area is spruce dominant. Maybe at some time in the past, it contained more pine when fire was more prevalent. Will this project successfully imitate the impacts of fire with logging? Possibly but it doesn't appear that it happened in the recent past. Maybe this project is trying to force a square peg in a round hole? Is the driving force for this project to produce volume for the sawmills? It does not appear that it will be all that desirable to the timber purchasers. This is low value spruce that does not have an urgent need for harvesting. I suggest you table this project and let this project area rest for another 15 years. It has had a significant amount of disturbance in the past 15 years.

Date submitted (UTC-11): 5/14/2021 12:00:00 AM
First name: Marcus
Last name: Warnke
Organization: SD Department of Agriculture and Natural Resources
Title: Natural Resource Planner
Comments:
[text copied from attached letter for coding purposes]

May 14, 2021

Pine and Aspen Restoration Project Comments Jeff Underhill

1019 N. 5th Street Custer, SD 57730

Dear Jeff,

The South Dakota Department of Agriculture and Natural Resources, Resource Conservation & Forestry Division (RCF) has completed its review of the Pine and Aspen Restoration Project Scoping Letter and respectfully submits the following comments. Please note that our comments are made from a forest management perspective only.

* Page 2, paragraph 5: [ldquo]Implementation of the PAR project would-be consistent with Landscape Vegetation Diversity (LVD) objective 239 which directs the forest to manage for 20,000 acres of white spruce forestland.[rdquo] RCF suggests removing spruce to promote pine on sites where spruce has expanded outside of its preferred range, such as south-facing slopes and drier sites where pine is better suited.

* Page 2, paragraph 6: [ldquo]Treatments would be implemented on approximately 2,800 acres of National Forest System Lands. In addition, treatment of 200 acres of aspen dominated stands would occur per the 2018 Black Hills Resilient Landscapes (BHRL) Project Record of Decision.[rdquo] RCF suggests hardwood enhancement to increase forest diversity and improve wildlife habitat across the Black Hills. Treatments on 2,800 acres targeting conifer removal in these stands is appropriate. Removal of spruce to increase ponderosa pine is also appropriate on those drier, southern aspects where pine is better suited.

* Page 2, paragraph 7: [ldquo]Planting of ponderosa pine seedlings may occur in regeneration groups where natural regeneration will not meet minimum stocking standards due the lack of an optimal seed source or competition with other vegetation.[rdquo] Planting of ponderosa pine in the Black Hills is largely unnecessary except in areas where fire has eliminated the seed source in historically pine dominated landscapes, such as the Jasper fire footprint. Management resources should be focused on pre- commercial thinning efforts and prescribed fire to reduce the likelihood of these disturbances and to promote the structural stage objectives in the forest plan. Converting spruce stands to ponderosa pine through harvest and planting pine seedlings in the Black Hills is not an efficient use of resources considering the existing lack of forest diversity and excessive stands of overstocked pine regeneration.

Thank you for the opportunity to comment on this project. Please contact us at 605-394-2663 if you have any questions.

Sincerely,

Marcus Warnke

Natural Resources Planner

XC: Greg Josten, South Dakota State Forester Bill Smith, RCF Division Director



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

3305 WEST SOUTH STREET
RAPID CITY SD 57702-8160
danr.sd.gov

May 14, 2021

Pine and Aspen Restoration Project Comments
Jeff Underhill
1019 N. 5th Street
Custer, SD 57730

Dear Jeff,

The South Dakota Department of Agriculture and Natural Resources, Resource Conservation & Forestry Division (RCF) has completed its review of the Pine and Aspen Restoration Project Scoping Letter and respectfully submits the following comments. Please note that our comments are made from a forest management perspective only.

- **Page 2, paragraph 5:** *“Implementation of the PAR project would-be consistent with Landscape Vegetation Diversity (LVD) objective 239 which directs the forest to manage for 20,000 acres of white spruce forestland.”*
RCF suggests removing spruce to promote pine on sites where spruce has expanded outside of its preferred range, such as south-facing slopes and drier sites where pine is better suited.
- **Page 2, paragraph 6:** *“Treatments would be implemented on approximately 2,800 acres of National Forest System Lands. In addition, treatment of 200 acres of aspen dominated stands would occur per the 2018 Black Hills Resilient Landscapes (BHRL) Project Record of Decision.”*
RCF suggests hardwood enhancement to increase forest diversity and improve wildlife habitat across the Black Hills. Treatments on 2,800 acres targeting conifer removal in these stands is appropriate. Removal of spruce to increase ponderosa pine is also appropriate on those drier, southern aspects where pine is better suited.
- **Page 2, paragraph 7:** *“Planting of ponderosa pine seedlings may occur in regeneration groups where natural regeneration will not meet minimum stocking standards due the lack of an optimal seed source or competition with other vegetation.”*
Planting of ponderosa pine in the Black Hills is largely unnecessary except in areas where fire has eliminated the seed source in historically pine dominated landscapes, such as the Jasper fire footprint. Management resources should be focused on pre-commercial thinning efforts and prescribed fire to reduce the likelihood of these disturbances and to promote the structural stage objectives in the forest plan. Converting spruce stands to ponderosa pine through harvest and planting pine seedlings in the Black Hills is not an efficient use of resources considering the existing lack of forest diversity and excessive stands of overstocked pine regeneration.

Thank you for the opportunity to comment on this project. Please contact us at 605-394-2663 if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Marcus Warnke".

Marcus Warnke
Natural Resources Planner

XC: Greg Josten, South Dakota State Forester
Bill Smith, RCF Division Director

Date submitted (UTC-11): 5/14/2021 12:00:00 AM

First name: Mary

Last name: Zimmerman

Organization: Norbeck Society

Title: Vice president

Comments:

Please see attached document.

[text copied here from attached letter for coding purposes; see attached letter for photos and additional context]

Norbeck Society Comments

On the Scoping Document for the Pine and Aspen Restoration (PAR) Project Restoration and Resilience
Categorical Exclusion

Black Hills National Forest

May 14, 2021

Thank you for the 2-week extension of the deadline for comments on the Pine and Aspen Restoration project CE. Without this extra time, snow-cover would have prevented a thorough look at conditions in the proposed project area. Norbeck Society members were able to visit the project area a couple times and have the following concerns:

I. Restoration and Resilience Categorical Exclusion (CE) (36 CFR 220.6e(25))
(currently on hold for final review.)

This category is for Forest and grassland management activities with a primary purpose of meeting restoration objectives or increasing resilience. Activities to improve ecosystem health, resilience, and other watershed and habitat conditions may not exceed 2,800 acres.

1. In the Pine and Aspen Restoration Project CE, Forest Service suggests that the project area be [ldquo]restored[rdquo] to more pine. This area is currently one of the largest blocks of Spruce forest on the Black Hills National Forest and is one of the most southerly incidences of Spruce forest on the North American continent. It is one of the last and most southerly remnants of the great boreal forest that once extended into Nebraska during the last ice age. There is no evidence given in the PAR project scoping notice for the Forest Service assertion that Ponderosa pine was historically the most prevalent tree species in the project area.

Consider the 1896 Graves report:

[ldquo]At very high elevations in the northern part of the Limestone Range there are considerable bodies of spruce, and on northern slopes this tree occurs locally almost pure. A conspicuous example of this is near the head of main Castle Creek, where the north slopes are clothed with spruce and the southern exposures have a second growth of pine.[rdquo]

Consider Sheppard and Battaglia (2002):

White spruce (*Picea glauca*) series The Black Hills is home to the furthest western white spruce (*Picea glauca*) population in the United States. White spruce forests constitute the high-elevation coniferous forests of the Black Hills (fig.13) where temperatures are cooler and precipitation is greatest (fig. 2). These forests grow on soils derived from both igneous and limestone parent material. The common seral species in these forests include: ponderosa pine, aspen, and paper birch (Hoffman and Alexander 1987). Marriott and others (1999) recognized three white spruce community types, while Hoffman and Alexander (1987) reported only two.

Hoffman and Alexander[rsquo]s associations are included here for consistency with the ponderosa pine habitat types already reported.

The white spruce forests in the Black Hills are important habitats for wildlife. Big game species, such as deer and elk, utilize the white spruce forest for summer-fall range and thermal and hiding cover. Nongame animals also use these forests for habitat. Since these forests have limited distribution in the Black Hills, their contribution to the ecosystem is very important (Hoffman and Alexander 1987). The white spruce/twinflower (*Picea glauca*/*Linnaea borealis*) habitat type (fig. 14) is found in the higher elevations and wetter areas of the Black Hills. This habitat is usually found on northwest to northeast aspects and is distinguished from other types by the abundance of twinflower (*Linnaea borealis*) and the absence of grouseberry (*Vaccinium scoparium*) in the understory. Stands are typically found at elevations ranging from 5,800 to 6,423 feet (1,768 to 1,958 m). Soil texture is loamy with pH ranging from 5.4 to 7.3 and organic matter ranging from 2.7 to 10.5 percent. Other important shrubs in the understory include: bearberry, common juniper, prickly rose, russet buffaloberry, and white coralberry. Major grasses include Kentucky bluegrass and rough-leaved ricegrass. Forbs, such as wild strawberry, sweet-scented bedstraw, American sweetvetch (*Hedysarum alpinum*), and longspur violet (*Viola adunca*), are also in abundance. Mosses and lichens are also prevalent (Hoffman and Alexander 1987). The white spruce/grouseberry (*Picea glauca*/ *Vaccinium scoparium*) habitat type (fig. 15) is found in the cooler, moist, high elevations of the Black Hills. This habitat is distinguished from other types by the presence of grouseberry in the understory, although its coverage can be variable. Stands are typically found at elevations ranging from 5,697 to 6,693 feet (1,737 to 2,040 m). Soil texture is loam to silty clay loam with pH ranging from 4.9 to 6.9 and organic matter ranging from 2.3 to 7.7 percent. Other important shrubs in the understory include: bearberry, Oregon grape, common juniper, prickly rose, wild spirea, and white coralberry. Herbaceous species found in the understory include: yarrow, pussytoes, rough-leaved ricegrass, and Kentucky bluegrass (Hoffman and Alexander 1987).

(Ecology, Silviculture, and Management of Black Hills Ponderosa Pine Wayne D. Shepperd and Michael A. Battaglia, United States Department of Agriculture Forest Service Rocky Mountain Research Station General Technical Report RMRS-GTR- 97 Sept 2002)

2. The PAR scoping letter refers to a lack of late successional pine forest (SS5) in this area. Why would Black Hills National Forest be concerned about SS5 in this area of MA 5.1 when there are no concerns for maintaining SS5 on the rest of MA 5.1 and in fact, BHNF is has been cutting SS5 down across MA 5.1

3. Observation at some of the recent three-to-five-acre patch cuts done in the Luhtasaari (BHRL) planning area and of nearby private land where spruce had been cut off provides evidence these were not pine forests, but rather spruce forests with pine (and aspen) inclusions. While pine seed trees were left (as you suggest doing in the currently proposed project), almost none has regenerated; to the contrary, spruce is regenerating. In the recent patch cuts, we observed many spruce forest cohorts dying because of removal of the spruce canopy. These are evidence of the removal and destruction of the legendary Black Hills Spruce Forest ecosystem [ndash] what was the botanical equivalent of Beethoven's 5th Symphony. Now those patches are playing a solo kazoo having suffered a tremendous loss of species diversity. In the patch cuts, we saw dead and dying Grouse berry, Pipsissewa and other wintergreens, *Hylocomium splendens* (a boreal moss species), twinflower, and others. With any luck, these patches will eventually close in with spruce again, as evidenced by the regen, but it will take more than a century for them to acquire the complexity that exists there at present. There is a danger that the patch cuts will dry out the intact spruce forests nearby, let wind into the denser stands and the unintended consequence will be the collapse of these special ecosystems. Evidence on the ground points to these forested areas being historically dominated by spruce ecotypes with small inclusions of aspen and pine and there is no need to increase the occurrence of ponderosa pine and aspen. These are spruce forests, and there is nothing to restore. Actions described in PAR scoping constitute type conversion.

[Photo caption] Beethoven's 5th Symphony - Without a doubt, the most pristine and richly diverse forests of the Black Hills are our spruce dominated forests.

[Photo caption] The solo kazoo - Luhtasaari patch cut. Spruce cut, pine seed-trees left [ndash] no pine regen.

[Photo caption] Private land nearby [ndash] spruce just wants to be spruce.

4. We suggest that if you want to restore something on the forest, the perfect project awaits immediately west of the PAR area where there is a clear record of Forest Service acting to change from Aspen to Pine:

[Photo caption] West of PAR area where Forest Service tore up 480 acres of aspen in order to grow more pine[hellip] [ldquo]back in the day[rdquo] more than a half-century ago.

[Photo caption] First, do no harm[hellip]

I. Extraordinary Circumstances

Extraordinary circumstances prohibit the use of a CE for the proposed Pine and Aspen Restoration Project. The American marten is a reintroduced native species that neither the Forest Service nor SDGFP have any population data on or status information. This species is a Region 2 Forest Service "sensitive species" that is on the verge of threatened. The survival of snail colonies and ruffed grouse (a management indicator species) are also of grave concern in the proposed PAR project area.

From FSH 1909.15 [ndash] National Environmental Policy Act Handbook Chapter 30 [ndash] Categorical Exclusion from Documentation:

Resource conditions that should be considered in determining whether extraordinary circumstances related to a proposed action warrant further analysis and documentation in an EA or an EIS are:

(1) Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species;

In considering extraordinary circumstances, the responsible official should determine whether or not any of the listed resources are present, and if so, the degree of the potential effects on the listed resources. If the degree of potential effect raises uncertainty over its significance, then an extraordinary circumstance exists, precluding use of a categorical exclusion.

1. We note that in the Luhtasaari Planning documents show that much of this area contains American marten habitat. Martens were reintroduced into the Black Hills beginning in 1981. They are found in a narrow range of habitat types associated with coniferous forests (Buskirk 2002) and require late successional stands of mesic conifers, especially those with complex physical structure near the ground (Buskirk and Powell 1994). Potential marten habitat in the Black Hills is based on the distribution of white spruce. Ponderosa pine is not considered optimal habitat, although there is evidence that martens use pine habitat in the Black Hills. Rocks, low-lying branches, fallen logs, and stumps (Davis 1983) and lush forb and shrub vegetation on or near the ground and subnivian17 sites (Buskirk 2002) provide thermal and protective cover as well as hunting habitat. They stay close to overhead cover and are intolerant of habitat types with less than 30 percent canopy cover (Buskirk and Powell 1994). Further, territories of male American martens are $1 \frac{1}{2}$ to 2 square miles.

If there are no recent surveys and have no information about American marten populations in the Black Hills and if the Forest Service doesn't know for sure how that project will affect the American martin and its critical habitat and/or the ability of its prey, then the FS cannot use a CE and at a minimum, Black Hills National Forest will need to do an EA.

II. Climate of over-harvesting and the Rocky Mountain Research Station General Technical Report [ndash] 422

The Black Hills National Forest has been overharvested for the past decade. If BHNF just wants volume to appease the political-industrial complex, that is exactly what should be disclosed to the public, not disingenuous statements about [ldquo]restoration[rdquo] etc. Given the current overcutting on the Forest, BHNF should refrain from lining up projects and CEs to

feed an insatiable industry. This forest belongs to the public and it is the Forest Service's duty to care for it while balancing a multitude of values and uses, not just one. Putting off lowering the annual sales volume violates not only the National Forest Management Act and the Multiple Use Sustained Yields Act, but it is also an affront to Goal 3 of the BHNF Forest Plan: Provide for sustained commodity uses in an environmentally acceptable manner. The longer this situation goes un-corrected, the worse the outcome will be, for both the rural local economies and the environment.

I. Cumulative effects

If Forest Service takes the ill-advised action of proceeding with this project, we would like disclosed the cumulative effects of PAR and the Mountain Pine Beetle Response project and the Black Hills Resilient Landscapes project.

What will the Structural Stages be in the project area?

II. Collaboration

What collaborative efforts have been made concerning this project?

In Conclusion

We support the duty of this Federal Agency to preserve and protect the Black Hills National Forest Land Resource which serves a multitude of uses. The actions of today must first and foremost enhance the strength and resiliency of ecosystems and decisions must be made for the good of the living systems of the forest. That is how the people are best served.

We believe that the Black Hills National Forest is the beneficiary of competent and capable employees who care about the forest and understand the issues that we have outlined in these comments. We think Forest Service personnel have reason to be proud of the history of integrity owned by this agency.

We also understand the industry, political and budgetary pressures that could derail possible benefits to this landscape and the people who will rely on its graces in the future. We request that you resist that derailment. What a shame if the health of the forest and the best interest of the people is thrown aside in the interest of timber volume targets.

We look forward to and appreciate your thorough and thoughtful consideration of the issues we presented. Again, thank you for the opportunity.

Norbeck Society Comments
On the Scoping Document for the Pine and Aspen Restoration (PAR) Project
Restoration and Resilience Categorical Exclusion
Black Hills National Forest
May 14, 2021

Thank you for the 2-week extension of the deadline for comments on the Pine and Aspen Restoration project CE. Without this extra time, snow-cover would have prevented a thorough look at conditions in the proposed project area. Norbeck Society members were able to visit the project area a couple times and have the following concerns:



May day in the Black Hills high-country

I. Restoration and Resilience Categorical Exclusion (CE) (36 CFR 220.6e(25))
(currently on hold for final review.)

This category is for Forest and grassland management activities with a primary purpose of meeting restoration objectives or increasing resilience. Activities to improve ecosystem health, resilience, and other watershed and habitat conditions may not exceed 2,800 acres.

1. In the Pine and Aspen Restoration Project CE, Forest Service suggests that the project area be “restored” to more pine. This area is currently one of the largest blocks of Spruce forest on the Black Hills National Forest and is one of the most southerly incidences of Spruce forest on the North American continent. It is one of the last and most southerly remnants of the great boreal forest that once extended into Nebraska during the last ice age. There is no evidence given in the PAR project scoping notice for the Forest Service assertion that Ponderosa pine was historically the most prevalent tree species in the project area.

Consider the 1896 Graves report:

“At very high elevations in the northern part of the Limestone Range there are considerable bodies of spruce, and on northern slopes this tree occurs locally almost pure. A conspicuous example of this is near the head of main Castle Creek, where the north slopes are clothed with spruce and the southern exposures have a second growth of pine.”

Consider Sheppard and Battaglia (2002):

White spruce (*Picea glauca*) series The Black Hills is home to the furthest western white spruce (*Picea glauca*) population in the United States. White spruce forests constitute the high-elevation coniferous forests of the Black Hills (fig.13) where temperatures are cooler and precipitation is greatest (fig. 2). These forests grow on soils derived from both igneous and limestone parent material. The common seral species in these forests include: ponderosa pine, aspen, and paper birch (Hoffman and Alexander 1987). Marriott and others (1999) recognized three white spruce community types, while Hoffman and Alexander (1987) reported only two. Hoffman and Alexander's associations are included here for consistency with the ponderosa pine habitat types already reported.

The white spruce forests in the Black Hills are important habitats for wildlife. Big game species, such as deer and elk, utilize the white spruce forest for summer-fall range and thermal and hiding cover. Nongame animals also use these forests for habitat. Since these forests have limited distribution in the Black Hills, their contribution to the ecosystem is very important (Hoffman and Alexander 1987). The white spruce/twinflower (*Picea glauca*/*Linnaea borealis*) habitat type (fig. 14) is found in the higher elevations and wetter areas of the Black Hills. This habitat is usually found on northwest to northeast aspects and is distinguished from other types by the abundance of twinflower (*Linnaea borealis*) and the absence of grouseberry (*Vaccinium scoparium*) in the understory. Stands are typically found at elevations ranging from 5,800 to 6,423 feet (1,768 to 1,958 m). Soil texture is loamy with pH ranging from 5.4 to 7.3 and organic matter ranging from 2.7 to 10.5 percent. Other important shrubs in the understory include: bearberry, common juniper, prickly rose, russet buffaloberry, and white coralberry. Major grasses include Kentucky bluegrass and rough-leaved ricegrass. Forbs, such as wild strawberry, sweet-scented bedstraw, American sweetvetch (*Hedysarum alpinum*), and longspur violet (*Viola adunca*), are also in abundance. Mosses and lichens are also prevalent (Hoffman and Alexander 1987). The white spruce/grouseberry (*Picea glauca*/*Vaccinium scoparium*) habitat type (fig. 15) is found in the cooler, moist, high elevations of the Black Hills. This habitat is distinguished from other types by the presence of grouseberry in the understory, although its coverage can be variable. Stands are typically found at elevations ranging from 5,697 to 6,693 feet (1,737 to 2,040 m). Soil texture is loam to silty clay loam with pH ranging from 4.9 to 6.9 and organic matter ranging from 2.3 to 7.7 percent. Other important shrubs in the understory include: bearberry, Oregon grape, common juniper, prickly rose, wild spirea, and white coralberry. Herbaceous species found in the understory include: yarrow, pussytoes, rough-leaved ricegrass, and Kentucky bluegrass (Hoffman and Alexander 1987).

(Ecology, Silviculture, and Management of Black Hills Ponderosa Pine Wayne D. Shepperd and Michael A. Battaglia, United States Department of Agriculture Forest Service Rocky Mountain Research Station General Technical Report RMRS-GTR-97 Sept 2002)

2. The PAR scoping letter refers to a lack of late successional pine forest (SS5) in this area. Why would Black Hills National Forest be concerned about SS5 in this area of MA 5.1 when there are no concerns for maintaining SS5 on the rest of MA 5.1 and in fact, BHNH is has been cutting SS5 down across MA 5.1?
3. Observation at some of the recent three-to-five-acre patch cuts done in the Luhtasaari (BHRL) planning area and of nearby private land where spruce had been cut off provides evidence these were not pine forests, but rather spruce forests with pine (and aspen) inclusions. While pine seed trees were left (as you suggest doing in the currently proposed project), almost none has regenerated; to the contrary, spruce is regenerating. In the recent patch cuts, we observed many spruce forest cohorts dying because of removal of the spruce canopy. These are evidence of the removal and destruction of the legendary Black Hills Spruce Forest ecosystem – what was the botanical equivalent of Beethoven’s 5th Symphony. Now those patches are playing a solo kazoo having suffered a tremendous loss of species diversity. In the patch cuts, we saw dead and dying Grouse berry, Pipsissewa and other wintergreens, *Hylocomium splendens* (a boreal moss species), twinflower, and others. With any luck, these patches will eventually close in with spruce again, as evidenced by the regen, but it will take more than a century for them to acquire the complexity that exists there at present. There is a danger that the patch cuts will dry out the intact spruce forests nearby, let wind into the denser stands and the unintended consequence will be the collapse of these special ecosystems. Evidence on the ground points to these forested areas being historically dominated by spruce ecotypes with small inclusions of aspen and pine and there is no need to increase the occurrence of ponderosa pine and aspen. These are spruce forests, and there is nothing to restore. Actions described in PAR scoping constitute type conversion.



Beethoven’s 5th Symphony - Without a doubt, the most pristine and richly diverse forests of the Black Hills are our spruce dominated forests.



The solo kazoo - Luhtasaari patch cut. Spruce cut, pine seed-trees left – no pine regen.



Private land nearby – spruce just wants to be spruce.

4. We suggest that if you want to restore something on the forest, the perfect project awaits immediately west of the PAR area where there is a clear record of Forest Service acting to change from Aspen to Pine:



*West of PAR area where Forest Service tore up 480 acres of aspen in order to grow more pine
... "back in the day" more than a half-century ago.*



First, do no harm...

II. Extraordinary Circumstances

Extraordinary circumstances prohibit the use of a CE for the proposed Pine and Aspen Restoration Project. The American marten is a reintroduced native species that neither the Forest Service nor SDGFP have any population data on or status information. This species is a Region 2 Forest Service "sensitive species" that is on the verge of threatened. The survival of snail colonies and ruffed grouse (a management indicator species) are also of grave concern in the proposed PAR project area.

From FSH 1909.15 – National Environmental Policy Act Handbook
Chapter 30 – Categorical Exclusion from Documentation:

Resource conditions that should be considered in determining whether extraordinary circumstances related to a proposed action warrant further analysis and documentation in an EA or an EIS are:

(1) Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species;

In considering extraordinary circumstances, the responsible official should determine whether or not any of the listed resources are present, and if so, the degree of the potential effects on the listed resources. If the degree of potential effect raises uncertainty over its significance, then an extraordinary circumstance exists, precluding use of a categorical exclusion.

1. We note that in the Luhtasaari Planning documents show that much of this area contains American marten habitat. Martens were reintroduced into the Black Hills beginning in 1981. They are found in a narrow range of habitat types associated with coniferous forests (Buskirk 2002) and require late successional stands of mesic conifers, especially those with complex physical structure near the ground (Buskirk and Powell 1994). Potential marten habitat in the Black Hills is based on the distribution of white spruce. Ponderosa pine is not considered optimal habitat, although there is evidence that martens use pine habitat in the Black Hills. Rocks, low-lying branches, fallen logs, and stumps (Davis 1983) and lush forb and shrub vegetation on or near the ground and subnivean¹⁷ sites (Buskirk 2002) provide thermal and protective cover as well as hunting habitat. They stay close to overhead cover and are intolerant of habitat types with less than 30 percent canopy cover (Buskirk and Powell 1994). Further, territories of male American martens are 1 ½ to 2 square miles.

If there are no recent surveys and have no information about American marten populations in the Black Hills and if the Forest Service doesn't know for sure how that project will affect the American martin and its critical habitat and/or the ability of its' prey, then the FS cannot use a CE and at a minimum, Black Hills National Forest will need to do an EA.

III. Climate of over-harvesting and the Rocky Mountain Research Station General Technical Report – 422

The Black Hills National Forest has been overharvested for the past decade. If BHNF just wants volume to appease the political-industrial complex, that is exactly what should be disclosed to the public, not disingenuous statements about "restoration" etc. Given the current overcutting on the Forest, BHNF should refrain from lining up projects and CEs to

feed an insatiable industry. This forest belongs to the public and it is the Forest Service's duty to care for it while balancing a multitude of values and uses, not just one. Putting off lowering the annual sales volume violates not only the National Forest Management Act and the Multiple Use Sustained Yields Act, but it is also an affront to Goal 3 of the BHNH Forest Plan: Provide for sustained commodity uses in an environmentally acceptable manner. The longer this situation goes un-corrected, the worse the outcome will be, for both the rural local economies and the environment.

IV. Cumulative effects

If Forest Service takes the ill-advised action of proceeding with this project, we would like disclosed the cumulative effects of PAR and the Mountain Pine Beetle Response project and the Black Hills Resilient Landscapes project.

What will the Structural Stages be in the project area?

V. Collaboration

What collaborative efforts have been made concerning this project?

In Conclusion

We support the duty of this Federal Agency to preserve and protect the Black Hills National Forest Land Resource which serves a multitude of uses. The actions of today must first and foremost enhance the strength and resiliency of ecosystems and decisions must be made for the good of the living systems of the forest. That is how the people are best served.

We believe that the Black Hills National Forest is the beneficiary of competent and capable employees who care about the forest and understand the issues that we have outlined in these comments. We think Forest Service personnel have reason to be proud of the history of integrity owned by this agency.

We also understand the industry, political and budgetary pressures that could derail possible benefits to this landscape and the people who will rely on its graces in the future. We request that you resist that derailment. What a shame if the health of the forest and the best interest of the people is thrown aside in the interest of timber volume targets.

We look forward to and appreciate your thorough and thoughtful consideration of the issues we presented. Again, thank you for the opportunity.

